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Thoughts from the Profession.

GRADUATION ADDRESS,

*By Prof. C. N. Peirce, Dean of Pennsylvania College of Dental Surgery,
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GRADUATES OF THE PENNSYLVANIA COLLEGE OF DENTAL SURGERY:
—On behalf of my colleagues, it is my pleasure to extend to you congratulations on the successful termination of your college course; and also, to welcome you upon your entrance into what is to many of you, a new field of labor and usefulness.

In doing this, I shall not rehearse the familiar talks we have, almost daily, had on subjects which have necessarily occupied our time and thoughts, but rather supplement these with suggestions having a broader field, in which to work the leaven of their discontent, and it may be attune the more professional notes to a higher key, so that in their messages for the alleviation of suffering and staying of destruction, they may awaken the artist to a keener sense of his obligations, and to that extent help to elevate the profession (of which he is one) to a broader and higher plane, from which not only relief to the afflicted shall be dispensed, but also some elements contributing to a richer life.

When quite a lad it was my great good fortune to listen, on several occasions, to words of wisdom from one of America's greatest men, the Rev. Theodore Parker; at one of these memorable periods, he said: "The highest product of a nation is its men. The highest product of you and me is our character. Our reputation is what comes to be thought of us; our character is what we come to be." It is that by which we are known, as John or James, Julia or Jane. It is the inherent, the resident force, that gives us an individuality, and places its seal on our every movement,

act or word. It is the result of a process in, and a product of development, by which one is distinguished from his fellows, and it *should* indicate a tenacity of purpose, a sense of self-reliance.

Character is to us what the main-spring is to the watch, the *controlling force*. If the character be wanting, immature, or childish, the acts will correspond, and however fair and promising these may be to the superficial observer, if they lack the elements of character or individuality behind them, a puff of wind will demoralize or entangle them.

If we analyze this character, and study its etiology, if we may so use this term, we shall find it the product of three factors. First.—That which we have from our ancestors inherited; a potential force, rather the cumulative force of previous generations wrapped up in our mother germ, and by our living subsequently elaborated. Second.—That which we have absorbed or appropriated from the thousand and one things with which we daily, hourly come in contact—our environment. Third.—Our digestion and appropriation of this fruitful supply.

It is the union of these stored energies which makes us of value to ourselves, and renders, good or ill, the influences we exert on our fellows, on our family, on our neighborhood, on the nation. In a word, the absence or presence of this element labels us idiot or man. Without character one is but a toy, a creature of the fitful winds, and like the chameleon, ever cowardly, changing the color to correspond with the hues of support.

Do you know any such? Look around you, you find them in colleges, in organizations, religious as well as secular, puffing or inflating themselves that a favorable breeze may take a broader hold and blow them into some safe port, or a light plank float them into some fruitful harbor; in short, trusting that something will turn up, or down, by which their measure will be filled without effort on their part.

The greatest enemy to character is indifference—let us call it by plain English, laziness—lounging or loafing on house or street corners without a purpose; or, it may be as a *dude*—listlessly wandering up and down the street without an object in view save to stare out of countenance some pretty face, and to kill time. Behaving as if the world were not full of activity, and as if there were not hundreds of things right at hand to be done or studied.

Of all the miserable bores one meets there is none so pitifully insufferable as the man too lazy to work and too cowardly to think. He deems it so much easier to have somebody to think and act for him, rather than by effort assume the responsibility of his own

salvation, with conclusions drawn from his own observations. So much less effort to flutter about from one theory to another, as the butterfly from flower to flower for food, than to seek with patient industry the truth.

In this struggle for existence, this desire for place and position, how many of those who get left, or make a failure of life, have relied on the *hitch on and carry* principle?

Do you know any comrades who, in a quiz or examination, desired to copy from or be told by their neighbors?

Let me remind you that animals adopting that fatal practice of parasitism rapidly lose all power of independent existence; and of all the degrading habits it is the most dangerous. If there be any one practice in which the genus homo indulges, that should strengthen the theory of descent from a Simian ancestry, or at least from a common ancestor with the monkeys, it is this miserable desire to rely on others—to copy rather than to run an independent, self-reliant course.

The shortest distance we are removed from those not very ancient relatives—the monkeys—the more readily we revert to their customs, and the more inclined we are to imitate each other in speech, in thought, in religion, in dress, in *gait or carriage*. This is not alone true of students. How the masses crowd into a fashionable church, run after a popular minister, adopt a fashionable costume, denounce an innovation on time-worn customs, or an unfamiliar idea. We might suppose there was some great gain to be secured, or on it their lasting salvation depended.

After all, when we get at the true reason, it is much the same that makes a group of monkeys at the sight of strangers crowd upon the same limb, or a flock of sheep follow their leader or mass themselves in a corner of their enclosure on being frightened—a sense of fear, a desire for protection, a want of self-reliance, a lack of individualism. In short, the absence of character. The French Quaker preacher struck the right key when he said in his sermon, “Peoples much like mutton.”

On the other hand, the higher the degree of development the less tendency to reversion, and the greater the diversity in thought, in religion, in dress and address.

Emerson says: “Character is nature in her highest form, beautifying with many colors, for nature never rhymes her children, nor makes two alike.”

I should like to urge you to look well to the argument, and neither accept or persist in any theory or practice in society or professional matters, unless you have for it an intelligent reason. If

associates or patients ask why you do thus and so, have a comprehensive answer, and so gain their confidence, and maintain your own self-respect.

Don't frequent, or connect yourself with a church, or any body of people, because its meeting-place is nicely cushioned and carpeted, or your wealthy and well-to-do neighbors belong thereto. If you go, do it because you think it will be profitable, by adding to your spiritual, moral, or intellectual strength; because you have an interest and confidence in what is taught, and in the work and good to be accomplished. Better by far be an honest and intelligent unbeliever, with all the odium the popular acceptance of the term might imply, rather than a canting hypocrite.

Don't decry an unpopular idea because the multitude oppose it. Recognize the fact that every innovation upon old usages, or established customs, costs a sacrifice, and it is by such society improves, grows. Note the men and women at whom society has pointed the finger of scorn, and cried, crucify them—crucify them. From Jesus of Nazareth to the present time they have been the salt of the earth.

As I am interested in the Pennsylvania College of Dental Surgery, so I desire, above all things, for her sake and for the welfare of her alumni that *they* shall be men and women of character. Character insures the foundation of the good, the valuable citizen. Upon it the family, the neighborhood and the nation are built. It is the reserve force which acts directly by presence and without effort. It is a stable product, steady of purpose, a power which moves not alone by talent and eloquence, but by personal magnetism. One so equipped in the family, in the Legislature, in Congress, stands for a fact, and is not only of support and influence to those around him, but to his distant constituency as well.

He holds no equivocal position. He believes not that the truth lies in the middle ground between antagonistic extremes. This may be a place of safety for the timid man, the time-server, the fence-man, but not for the man of character, the truth-seeker.

You may all have read of the famous dispute concerning the shield, with sides of different colors; one observer contending it was gold, the other maintaining it was silver. And when the contest grew warm, with a prospect of blows, a compromise man was called in, and he pronounced the shield a neutral tint, a mongrel color; but this not being satisfactory, it was agreed to try the scientific method and investigate—when it was found that both of the original parties were right and both were wrong. Each was right from his point of view, but each was wrong in excluding the

other's point of view and his opponent's honesty ; while the only man wholly wrong, and utterly without truth, was the compromise man ; he had no truth in him.

"Truth is no heterogeneous mixture of opposite extremes, but with a full knowledge of all the views, a combination into one solid reality."

A prominent clergyman once said he recognized there was a great deal of ordinary work to be done in this world, but he thanked the Lord there were a great many ordinary people to do this work. So we all recognize that there are a multitude of people who are a little deficient in the elements of character, and that *they* must have leaders and teachers, possessing these traits. We sincerely hope that the minister can again thank the Lord that we can furnish from our alumni our quota of these, the thinkers and teachers.

You know the masses of people, in accepting an idea or a principle, are much as they are in accepting a god. It must be lodged in a person or an object before it can be recognized.

The question for each one of you to put to yourselves is, *Do you* represent an idea? Will you be one of the leaders, or *only one* of the multitude? This is the problem for your solution. There is no scarcity of the latter, while for the former there is room plenty ; the upper space is unlimited.

"A just man, though he sleeps," says Emerson, "seems to purify the air, and his house to adorn the landscape and strengthen the laws."

It is so with the man of character, he has made a solid foundation for himself when he has established the honesty of his convictions and the courage of the same, by which he may stimulate to activity private and public energy resulting in great good.

A man of character need never fear oblivion or of being unrecognized. There is an ancient tradition, "That no metamorphosis could hide a god from a god." It is equally true of personified characters. To be felt and appreciated there is no need of purpose and fulsome advertising, or of noise and confusion. These are not evidences of worth, but rather the contrary. A rock elevated by a powder blast may make a deal of noise and splutter, but it has less gravity than when quietly resting in a wall.

College students before and after a lecture will make noise enough for a contest between an earthquake and a thunder storm, without a soul being hurt or an idea elaborated. But the little rill, born of a summer shower, will noislessly carry the sand from the hillside, and giving it to the brook will, in the impregnated tide, find a resting place beneath the waves, and there laying the egg of an

island, will through years of incubation lift its head above the waters and give a dwelling place for man.

Intrinsic energy worketh everywhere, and the leaven produces greater wonders than the blind, who, having been restored to perfect sight, see or feel.

The man of character is firm of purpose, but not stationary in position. He is always on the upward trend. He recognizes that nothing is fixed, everything tilts and rocks. Ideals of to-day may be the broken reeds of to-morrow. This has been especially true of the theological, and is not much less so with other professions.

The pupil is taught, and in turn sets hard lessons for his master, and all in response to the great struggle for improvement, the desire for growth, which every one must possess who keeps abreast with his fellows.

Missteps may be made, blundering if you please, and oft-times badly. This is but natural, and it is a good providence's method of taking a forward step. But don't be afraid to recognize and acknowledge the error. The beauty of a mistake is to take advantage of and profit by it. It may be like a smoky chimney, cause one to choke and make the eyes to water, yet the bricks of which it is built are good enough, only a little out of place. They need readjusting with some good cement.

Don't be impatient of too slow a recognition or advancement; you know individuals, like society, grow not by catastrophies or by steps a league in length, but by inches. Short rises and broad tread make the safest stairway.

The professional man of conceit and self-sufficiency is always known as the shallow man. He may fancy he stands alone and owns the road he has traveled; but in this he is not more wise than the stag in the fable, who, scorning his feet, was over zealous and vain of his antlers, and when the hunters pursued him, the latter became entangled in the forest, and but for the timely aid of the former, he would have been sacrificed.

The universal law is progress. Nothing is fixed, everything looks forward. Thoughtful men and women recognize their dependence upon the past, and study the sources of the many blessings they have enjoyed, and in return for these they strive to encircle their progeny with positions rich in greater opportunities.

The lover's eyes look beyond the maid he loves, and he redoubles his energies for an ideal life and home. The young mother presses to her bosom the innocent, upturned face, and reads therein the lines which connect her with future generations.

The resistless energy which pervades all nature has in unmistakable characters written over the heavens, the earth, and all things therein—change; progress.

Before closing let me bring to your mind a few familiar illustrations of the effect of *individualism of character* upon other as well as our own profession. Harvey, through his patient investigations, devised the theory of the circulation of the blood. Lister, by careful experiment, has almost annihilated the dangers of cerebral and abdominal surgery. Lamark, Newton, Faraday, Spencer, Darwin, and a host of others have revolutionized the theology of the last century, and relegated much of the superstition of ages to the domain of credulity and ignorance. In our own speciality of odontology, Harris and Litch have given us a literature which compares favorably with that of other professions. W. D. Miller, of Berlin (his adopted home), has, with his microscope, culture medium, and indomitable perseverance raised our theories of dental decay or odontopathy from empyrical wanderings to a scientific foundation. J. N. Farrar, of New York City, has, by his twenty years of unremitting labor, given us a work on orthodontia rich in methods and artistic appliances, which will long be looked upon as a cherished and valuable illustration of the talent in our profession, and a lasting monument to the author. While my colleagues, in their perseverance and skill, have, in a comprehensive manner, instructed you in studies which form the basis of your life-work, giving you a foundation on which to build your fortune, your fame, and an enviable and useful life.

Comrades, see to it that by integrity and devotion to the interests of *your*—of *our*—profession that an unfavorable criticism shall be as foreign to your desserts as your most cherished friends can desire.

AN ANOMALOUS INSTANCE OF SALIVARY CALCULUS.

A lady recently came under my care for a troublesome but painless swelling of the left cheek. The medical man who sent her suggested that it was distention of a greatly dilated parotid duct possibly caused by a salivary calculus. On the most careful examination I could detect no calculus, but found the cheek of that side somewhat prominent and unsightly. The lady said she had been bothered by a swelling in that cheek ever since she was four years old, and that sometimes after a meal it was much more conspicuous than at other times. She was determined to have something done for the swelling, and I was content to hold my diagnosis

as to the exact nature of the soft tumor in suspense till I could make a thorough exploration, which I did a few days later, Dr. Prickett kindly helping. There was a rounded doughy swelling of the one cheek, but no calculus discoverable. Anesthesia having been produced and the jaws separated by Mason's gag, an incision was made through the mucous lining of the mouth and the buccinator, when a lobulated piece of yellow fat at once protruded. Gentle traction being made on this, a lipoma of considerable size readily left its bed between the buccinator and masseter muscles. The cheek was then flat like the other. It seemed as if no further treatment would be required, and nothing more was attempted. Within a few days, however, it became evident that the patient did not share our favorable view. She said that on several occasions the cheek had swollen as badly as ever. As I had never happened to see the cheek when swollen as she described, I thought it her imagination. She was therefore advised to return home and come again should she meet with further inconvenience. In a short while she came, and directed attention to a small, hard substance, which shifted its position over the masseter; it was evidently the salivary calculus of which her medical attendant had spoken. An attempt was promptly made to extract it through the mouth by reopening the old wound, but on introducing a pair of forceps the concretion slipped away, and so effectually concealed itself that further search had to be abandoned. On a subsequent occasion, on which the calculus was discovered, I leisurely examined it from the outside of the cheek, and found the limit of its journey forward was just beyond the hinder border of the masseter, and that with the slightest touch it slipped back into a dilatation of Steno's duct, which formed a wide chamber behind the angle and ramus of the jaw. From this pouch the calculus could be swept out by firm pressure. Sometimes it was not easy to bring it out, as it hid itself on the inner aspect of the mandibular angle in the capacious chamber. Having been twice disappointed in the treatment when operating through the buccinator, I determined to cut straight down on to the calculus through the cheek, having chased it forward and secured it by the finger pressed over the hinder part of the masseter. In this way its extraction proved simple. The skin wound, which was closed with horsehair sutures, healed by first intention, giving no leakage of saliva, and leaving a scar, which is now hardly noticeable. The calculus was a phosphatic concretion of the size and shape of a small date stone.

—E. Owen, in *Lancet*.

TEMPORARY WORK.

Patients dislike to go very long without teeth, and it is unnecessary. Long experience has satisfied me that generally the teeth should be inserted within forty-eight hours after extraction, taking the impression as soon as the bleeding has stopped, and before the gums have swollen.

When the front teeth or their remains have just been removed, I make use of the socket to insert, for a short distance, the neck of the artificial teeth, giving, of course, a natural appearance to them.

There is rarely room for an artificial gum in temporary teeth, and then only that furnished by the rubber plate being allowed to cover the alveolar ridge. In the lower jaw, if many teeth have been extracted, it is better to wait till the gums are healed; but if the patient is desirous of having them at once, make them; if the remains of the front teeth have just been removed, set, as in the upper, the necks of the teeth into the sockets. It is seldom possible to cover the outside of the alveolar ridge with the plate, without projecting the lip.

Injury comes to the ridge by wearing the temporary plates too long. It causes excessive absorption where it presses too hard, and is quite annoying. The patient should visit the dentist occasionally that changes may be made in the plate or grinding surfaces of the teeth as the gums settle.

—Dr. L. P. Haskell, in *Students' Manual*.

Dr. McKellops is to be credited with ingeniousness in the use of chloro-percha in root-filling; and his patience and perseverance in teaching others has made many as successful as himself. Dr. T. W. Prichett says:

It is a little surprising now how incredulous we were that McKellops could fill roots with the "sticky stuff," as he had been claiming to do for some years previous; and not till he exhibited a tooth he had filled in the mouth of a patient and afterward extracted and ground away to show the material in the root canals to their apices, did doubt give way.

Even so stout a defender of gold foil for root fillings as our Dr. Black had been, was forced to surrender his faith in the superiority of his "golden idol" in the presence of this silent witness.

On every tongue was the question: "Mac, how did you do this?"

"I *picked* it in with a broach," he replied.

The cotton-wound broach and the gutta-percha cone were not yet evolved to simplify and perfect this very excellent method, but their use soon followed. Who was the first to proclaim them, I do not know, but before another meeting of the society, a large number of our members were practicing the newer method with great success.

FILLING MOLAR AND BICUSPID PULP CANALS.—D. S., Three Rivers, Mich., writes: "There are many root canals of molars and bicuspid's difficult to fill because of their small size."

There are not many canals that cannot be filled, if the operator is persevering and the patient can pay for the time. Make the openings as direct as possible over the canals, that the instruments may enter without curving; then, if they do not penetrate far, use a Gates-Glidden drill (smallest size), either on the engine right-angle or by hand, as circumstances indicate, till you pass the constricted part, which will usually be found near the opening of the canal, and can be enlarged by gradually increasing the size of the drill. Beyond this point the canal will be found large enough to admit of filling. Each operator has probably a method of his own, with which he is fairly successful. We use the Donaldson probes and cleansers, peroxid of hydrogen, hot wire drier, and, as we invariably fill with chloro-percha, the essential oils (cajeput, cloves, wood-creosote, eucalyptol, etc.) should be used for dressings, because solvents of the gutta-percha. After filling with chloro-percha, we follow it with a gold or copper point previously fitted to the canal; in large canals we prefer to use gutta-percha or lead points. Lastly, always use the rubber-dam where possible; don't be in a hurry, and don't fill it to-day if you are not sure you have reached bottom.

W. H. S.

A well-known Bangor dentist had a call from a man who demanded seven dollars, which he had paid for a set of artificial teeth which his wife had had made about seven years ago. He said the plate had shrunk and that it would no longer stay in his wife's mouth. Of course the dentist explained that the woman's gums had shrunk, but the last seen of the man he was on his way to a lawyer's office.

DR. THOMAS W. EVANS.

The following article from the pen of Mr. T. C. Crawford, appeared in the *New York Tribune* of December 28th, 1890, and was revised by Doctor Evans himself, who, in reply to a letter written to him on the subject, and requesting at the same time his photograph to be re-produced for the benefit of our ITEM's readers, and which appears as frontispiece in this issue, wrote as follows :

"It was the first I had seen of this article of Mr. Crawford's. In substance it is correct. I have no doubt it has been made up from memory, as at San Remo, Mr. Crawford and I frequently met, and conversation turned on the subject of which he writes."

WASHINGTON, Dec. 27.—A number of paragraphs published in American papers give erroneous details concerning the life of Theodore Evans, an American citizen who recently died in Paris. He was represented as having been the oldest member of a remarkable Philadelphia family. The Evans family sent out into the world three boys. The oldest established himself in Washington, where he has reached a good business success. The second brother, Theodore Evans, made his fortune both in Europe and in this country. But the most successful of the brothers was the youngest, Dr. Thomas W. Evans, who has lived for forty years as a prominent figure in Paris. His career reads more like a romance than a real history. He left America when he was not more than twenty years of age, and went to Europe with the fixed idea of establishing himself there. He was always exceedingly expert and apt in everything relating to mechanics. He mastered his profession in the broadest sense by also taking a degree in medicine, believing that it was important for the successful practice of dentistry that he should have the thorough education of a physician. He went to Europe at a time when American dentistry was unknown on that side of the water.

Dr. Evans had said that he made up his mind from the first to have as his clients all the royalties of Europe. He has succeeded, so that to-day there is not a single reigning sovereign, from the Queen of England to the Czar of Russia and the Sultan of Turkey, that he has not had in his operating chair. The doctor has also filled a large place in the world of private diplomacy, and has gathered together one of the largest fortunes in Paris. His first client was Napoleon III, when he was merely a claimant. Dr. Evans first became acquainted with Napoleon when the latter returned to Paris after his exile in London. The doctor obtained then the confidence and esteem of Napoleon. When the latter became President the confidence was increased. There was no one who was more intimate with, or had more influence with the Emperor later on than the quiet, matter-of-fact Dr. Evans. He was in the confidence of the Imperial Government at the time that Paris was made over by Baron Haussmann. He had confidence in the splendid future of Paris, and bought largely of real estate in the direction of the improvements. It was he who helped the Emperor design and carry out the vast improvements around the park of the Bois de Boulogne. The doctor's investments in the neighborhood of this now fashionable park have made him a many-times millionaire. Land bought by him in the early days of the

Imperial régime for thirty francs the square metre cannot now be obtained for less than one thousand francs.

The mother of the Countess of Montijo was first a client and then a friend of Dr. Evans. The mother sent her daughter to Paris as a school girl. The young Spanish beauty as a school girl spent all of her fête days at the house of Dr. Evans. It was Dr. Evans himself who took her to a ball given by Napoleon when President. The young lady had heard of the ball, and was anxious to go. Her mother had no invitation, as she was in moderate circumstances and unknown in the Paris world of fashion. Dr. Evans went to the President himself, and asked for an invitation for his fair protégé. It was at this ball that she was formally presented to the President. This presentation was made by Dr. Evans. The President of the French Republic was then so much struck by this young lady's dazzling beauty that he singled her out for the most marked attention, and danced with the young stranger several times. This attention made a marked sensation, and the young lady on the next day was a noted character. This acquaintance begun at the ball led afterward to the marriage.

The extremely intimate relations between the Emperor and Dr. Evans enabled the latter to perform a great service to this country. No account of it has ever been published. During the darkest days of the war the Emperor Napoleon was anxious to recognize the Southern Confederacy. He had fully made up his mind to this, and had entered into correspondence with the English Prime Minister to secure the co-operation of the latter's country. Dr. Evans, who is one of the most stanch and patriotic of Americans, insisted upon the Emperor's making a delay of a few weeks at least. The doctor said: "I will go to America and see Mr. Lincoln. I will visit Washington and learn the real truth of the situation. I know that the North must win. I believe that I can bring back to you evidence to prove this. You know that I have never deceived you, and that you can trust my report."

The Emperor, as a great concession to the demands of his old friend, agreed to the delay. Dr. Evans visited Washington, saw Mr. Lincoln, and obtained such assurances that he was satisfied that he could convince the Emperor that the Southern Confederacy should not be recognized. Fortunately the North had some tremendous victories during the doctor's absence from France, so the Emperor was willing, upon the doctor's return, to drop the whole matter. He placed in the doctor's hands at that time the correspondence which he had had with the English Foreign Office. If the famous doctor ever publishes his memoirs, these letters will make an interesting chapter.

It was during his early acquaintance with Louis Napoleon that the doctor became acquainted with the family of the present King of Denmark, whom he knew when the King was a poor German Duke with barely enough to live on. The King's daughters, afterward the Princess of Wales, the Empress of Russia and the Duchess of Cumberland, and his sons, the future Kings of Greece and Denmark, were then members of a quiet country family. Dr. Evans' attention to this family when they were living in the quiet of absolute retirement made him their friend later in life, when they all had arrived at the most brilliant positions in Europe.

There is no American who ever had such a footing at Marlborough House as Dr. Evans. He is the regular attendant on the English royal family,

and two or three times a year is the guest for a week or ten days of the Prince of Wales. The latter never visits Paris without calling on him at the house, and treats the Evanses as if they were his oldest and best friends. He is constantly sending them some token of his esteem or remembrance.

The first royal personage secured as a client by Dr. Evans was the King of Bavaria. This was during the early years of Dr. Evans' practice in Paris. He had hardly opened his office there when he had more than he could do. One of his clients was the Bavarian Minister, who was so grateful for the skill with which he was treated that he recommended the young dentist to his royal master. The latter wrote to Dr. Evans to come to Munich at once, but the doctor could not do so on account of his engagements. He had time, however, to go part way; so the King met the doctor at a frontier town and there began a friendship between the two men, which was taken up by the client's son, who afterward became the King. The large, brown shaggy dog that runs about inside of the yard of the doctor's place in Paris was a present to him from the Queen of Belgium. The German Imperial family has been on terms of intimacy with Dr. Evans for a number of years. The old Emperor was always much attached to him.

During the Franco-Prussian war Dr. Evans organized an ambulance service, which was carried on at his own expense. It did incalculable good and earned for him the gratitude of the French people, although he had been for a long time an object of suspicion after he assisted in the flight of the Empress. The plucky doctor used to ride down from his house to his office, even in those days, with a rifle sticking out of the window of his coupé. The threats made at the time on account of this plucky rescue in saving the life of the Empress from the mob soon gave way to thanks, when the public saw the effects of the humane service established by him for the benefit of the wounded. At the close of the war he was a constant peace-maker and mediator between the two countries. After peace was settled, the German Emperor sent for him, and offered to bestow upon him the Order of the Black Eagle, one of the highest in the Imperial gift. The doctor hesitated. He thought that such a token would hurt him, perhaps, in the esteem of his French friends, so he gently declined the honor, giving his reasons for the declination. The Emperor then devised a special order, which was to be for him alone, so he could not refuse it. France has in turn given Dr. Evans the highest rank it has, in the Legion of Honor, of which order he is a Grand Commander.

Indeed, to look at the doctor's collection of orders—for he never wears them, except on rare occasions, and then only the highest—it makes such decorations look cheap. He has had all of the orders possible to be conferred on him by Germany, Russia, and all the leading countries of Europe. He has scores of decorations in a cabinet in his library. One of the first Jubilee medals struck off for the Queen of England was sent to him, as was also one of the first mourning medals struck off after the death of the Emperor Frederick. Dr. Evans' house in Avenue Malakoff, constructed with all the richness, solidity and actual magnificence of a palace, is filled from top to bottom with beautiful objects, which should grace the future art museums of the National Capital, evidences of the gratitude and esteem of his royal patients and friends. In one of his cabinets is a magnificently jeweled and ornamented watch, which was given him by the Queen of Holland. It

was so handsome that he did not venture to wear it, but placed it in his cabinet of similar treasures. The next time he met the Queen he happened by chance to pull out his watch, and she exclaimed at once because he was not wearing the one she gave him. His reply was that it was too fine to be worn. Thereupon she ordered a plain watch, and that the doctor now carries.

The doctor was called in as a friend when the Crown Prince Frederick was taken to San Remo, and remained there during the Prince's stay. I happened to be at San Remo at the time, and it was there I became really well acquainted with the famous doctor. Every day he received dispatches from the Empress Augusta at Berlin. It was he who sent her private advices constantly of the condition of her son upon the terrible day when it was thought that the Crown Prince would strangle when the operation of tracheotomy was decided upon. There was no one in the little Italian village skilful enough to make the silver tube necessary to be used after the operation was performed. It was here the skilled hand of the American doctor was called into play. I walked down with him to a little jeweler's office in San Remo and saw him put on his workman's apron and begin with a blowpipe and a hammer upon a five-franc piece. He worked there all night, and the next morning a beautifully made silver tube was ready, and the life of the Prince was prolonged, where suffocation would probably have set in within the next twenty-four hours. There was no mention made of Dr. Evans in the story of this operation. In the English papers it was Dr. Morell Mackenzie who did everything, even to the making of the silver tube which no one but an extremely skilful man, with a natural turn for mechanics, could have made with the simple materials found in a country jeweler's shop.

Dr. Evans is noted for his direct and practical methods. He has no interest to serve at any of these courts, and therefore, he is trusted as few men have been trusted in the world of diplomacy. His career is one long story of personal services to prominent royal personages. One of the most notable of these services was rendered to the Crown Prince of Sweden while Dr. Evans was on a visit at the wedding of the sister of the Crown Prince. The doctor was asked by an aunt of the Prince if he had noticed anything peculiar about her nephew. The doctor answered that he had. The Prince was eccentric, and on the verge of madness from pain and suffering. The doctor saw him after the wedding, at the aunt's request, in the Prince's room. The doctor asked him why he seemed so unhappy. The Prince said: "I am desperate and despairing. I am suffering from the most hideous of headaches constantly." The doctor glanced at him, and then said: "Will you oblige me by standing on your head."

An aid-de-camp who was present protested at this disrespectful request. The doctor ignored him, and said to the Prince: "Do you want to be cured?"

"God knows I do," answered the Prince, "but there is no doctor that can do anything for me. I have tried them all."

"You will oblige me," said Dr. Evans, "by standing on your head."

This persistent demand gave the Prince a ray of hope. He complied, and the instant that he placed himself in this position a horrible discharge gushed from his mouth and nose. The doctor said: "I thought so. I will have you cured of this inside of a week." The trouble was an ulcerated tooth, the ulceration having eaten its way back of the nose and created a pus cavity of enormous size. The doctor bored a hole through the roof of his

patient's mouth, inserting a tube, and so succeeded in clearing out and absolutely curing the diseased place. The result was that inside of a month the Prince was restored absolutely to health. This cure led to his speedy marriage. He is to-day more than a devoted friend to the doctor.

Dr. Evans, has treated for a long number of years the Imperial family of Russia. The teeth of the children of this family are inclined to push out, giving a hideous expression to the face. It has been the special business of the doctor to train these teeth down to a natural position. In some cases, if the teeth had not been specially treated there would have resulted an absolute deformity. The Duchess of Edinburgh, who is considered to-day a fine-looking woman, would not have been so if the frontal development of her teeth had not been treated by Doctor Evans when she was a child.

Dr. Thomas Evans is of medium height, and inclined to be stout. He has a large head. His hair is still thick, and is worn in a careless, curling mass, swept back from his forehead, which is high and full. His eyes are a blue gray and deep set. He has a large Roman nose. A mustache and long side whiskers set off his round, plump face. He is about sixty years of age. He has no children. His wife is a tall, white-haired, aristocratic-looking woman, who presides with gracious dignity in the great house in Avenue Malakoff. The house is a centre for the most prominent people in the American colony. American visitors of standing always receive a warm welcome from the doctor and his wife. Although the doctor has been away from home for nearly forty years, he is always an enthusiastic American. He owns great properties in New York, Philadelphia and Baltimore. His wealth and position more than satisfy the original ambition of the poor boy who set out from Philadelphia forty years ago to seek his fortune in Europe.

LABORATORY HINTS.

We often have patients whose teeth become loose and need resetting, but they do not like to have it done as they have become used to the expression of those they are wearing. The work can be easily done and the same expression retained, as follows: Take an impression and make a plaster cast as usual; put the old plate on the cast and fasten it firmly with Fowler's Sticky Wax; next fasten the cast in the articulator, as usual, for a bite; after the plaster is set, take a sufficient quantity of modeling compound, soften thoroughly and fasten it to the other half of the articulator, make the top surface smooth, and have it high enough so that when the articulator is closed, the teeth will bed themselves full length in the compound.

The compound should be softened in hot water, and the work done quickly, so that the teeth can be closed in without much force. When set, open the articulator carefully, drawing the teeth out of their places without breaking or displacing, remove the

plate from the cast, take off the teeth, and arrange them in their order on a strip of wax. Now take the four incisors and place them in their respective places in the bite; close the articulator on them; with spatula and wax fasten them in their places to the base plate; when set, open the articulator and proceed as before, until the teeth are all mounted.

If the teeth need to be a little longer; (that is, show more in the mouth) after you get the bite, open the articulator with the set screw enough to give the extra length desired.

TEMPORARY PARTIALS.

We often have patients who want partials of several front teeth, and do not wish to go without. A nice way to do this work is to select the substitutes, get everything ready for the impression, extract the old teeth and roots, being very careful not to fracture the process. Now take the impression as soon as possible after stopping the bleeding; pour the plaster cast, when hard enough, separate from the impression, and cut away from the cast the sockets of the teeth as far toward the palatine surface as indicated, and from one-fourth to three-eighths inches deep.

For the teeth select those with roots, such as are used for continuous gum work, break off the roots, leaving from one-fourth to three-eighths inch above the enamel line; round off all sharp edges, grind and fit the roots until each one will fit up into its natural socket easily. Now set them in their places on the trial plate, and try them in the mouth; when in position, if each tooth fits up into its socket just far enough so that the natural gum overlaps and hides the enamel line, they are all right, and will make a natural looking substitute. This kind of work should be inserted as quickly as possible after extraction.

MAKING AND TEMPERING SPIRAL SPRINGS.

When the steel spiral springs of an instrument gets broken it is much more satisfactory to make one than to send the instrument off, and be without it for a week or more.

To make them use the best spring steel wire, select a smooth iron rod the size of the spring to be made; carefully draw the temper from the wire, fasten the rod and one end of the wire in a bench vise. Now wind the wire evenly and closely around the rod, until you get the length of the wire required for the spring. Take the rod out of the vise, fasten one end of the spring to the rod, taking hold of the other end, draw it along the rod until the spirals are the correct distance apart, to give the amount of spring wanted, fasten it firmly to the rod, then make the spring and rod

red hot, and quickly plunge them into cold water. After drying, rub them all over carefully with oil, and move them about in the flame of a lamp until the oil takes fire, which will give the spring the proper temper. I know there are some who make springs direct from tempered wire; but they are much more durable if shaped and then tempered. *Dr. Wm. H. Steele, Forrest City, Iowa.*

REFLEX EXPRESSIONS FROM CARIOUS TEETH.

These are so numerous as to almost stagger our belief; and were it not for the fact of the cases being recorded by observers of acknowledged ability in diagnosis, some of the reports might reasonably be discredited.

Magitot says :

Disturbances are caused in the senses of smell and taste by caries of the teeth in relation with nervous ramifications to the sensorial regions. Of the accidents produced in the sense of smell, we may instance lesions of the maxillary sinus occurring under the influence of the decay, either of the second bicuspid or of the first or second molar.

Then, again, epilepsy or epileptiform attacks are frequently referred to carious teeth.

The famous Dr. Benjamin Rush, of Philadelphia, gives in "An account of several cases of general diseases cured by the extraction of decayed and diseased teeth," in a letter to Dr. Miller, the following :

Some time in the year 1801 I was consulted by the father of a young gentleman in Baltimore, who had been affected with epilepsy. I inquired into the state of his teeth * and was informed that several of them in the upper jaw were much decayed. I directed them to be extracted—he followed my advice. In consequence of which I had lately the pleasure of hearing from his brother that he was perfectly cured.

Tomes quotes Dr. Ramskill (*Med. Times and Gazette*, 1862), who relates :

A boy, aged thirteen, has had frequent attacks of epilepsy for the last eighteen months. Latterly his mother has noticed that some days he rubs his left cheek, complaining of faceache, after which the fit follows. On examining the mouth, there is to be seen a molar tooth considerably decayed, with a swollen gum around it, and partly growing into the cavity; it is not very tender to the touch, and the examination does not give rise to the toothache. On questioning, I find the sensation which the boy experiences before a fit, does not seem to be one of pain, but rather an indefinite uneasiness. He always has a fit the night this comes on; he never felt it during the day. The tooth was extracted, and he had no recurrence of the attacks.

I find frequent reference to convulsions caused by carious teeth ;

* Too frequently neglected by physicians, even now. (D.)

sometimes characterized as "epileptic" or "epileptiform," and at others by the general term alone.

That reflex paralysis should occur, involving the face, arms and legs, in consequence of dental irritation, might also be questioned, were it not that the proofs are abundant, showing that after the removal of the supposed cause of the lesion, the paralysis gradually passed away, and the muscles resumed their normal action.

It is of course impossible to state, says Brubaker, *why* or *how* the neutral irritation, after being reflected to the trigeminal centre, inhibits the activity of both the medullary and spinal motor centres. Whatever the true pathology may be, there is a cessation in the discharge of efferent impulses through the motor nerves, so that the mobility of the corresponding muscles is temporarily impaired. The central trouble is most probably functional in character and not connected with inflammatory action.

Facial paralysis seems to be the most common form, but various other manifestations have been noted. A girl aged eighteen noticed a stiffness in the muscles of her face. In twenty-four hours complete paralysis of the left side took place. After three weeks she was advised to have several defective teeth extracted—she had thirteen removed—this was followed by improvement in the course of five days. Electro-galvanism was then employed and the patient entirely recovered. We find in Guy's Hospital Reports (1868, p. 93), a record of a woman who suffered from constant pain in the left side of the face and neck and in the left arm. The pain sometimes became intensely severe. The arm had lost nearly all muscular power; the patient could not raise it to her head, nor squeeze any object in her left hand. This state of things had existed two years, and she had been under medical treatment all the time. On examining her mouth, a carious left lower third molar was observed, which was extracted. She *immediately* felt great relief, and in a *few hours* all the symptoms had *completely* disappeared.

Tomes quotes from the London *Lancet* (January 22, 1859), an interesting account of a singular example of disordered muscular action, which was related by Mr. Hancock. "The patient, a young woman, had suffered for six months with spasmodic wry-neck (torticollis) and had submitted, without avail, to the usual treatment of counter-irritants and various internal remedies." A carious stump of a tooth was removed and a cure, in a few days, was the result.

Carious teeth have been shown to be responsible for pains in the neck and arms, and to the reflex disturbances which take place in the eyes and ears.

Tomes says "many well-authenticated cases have been recorded, in which not only functional but organic disease of the eye has been distinctly traced to the presence of diseased teeth," one of

which was an adult who had strabismus for three years and ptosis a portion of the time, caused by decayed teeth—their removal was a cure.

“Sir Thomas Watson (Lectures on Physic, 4th edition) mentions a case in which blindness confined to one eye, recurred three or four times, each time being cured by the extraction of a carious tooth.” Again, Tomes quotes from the Dublin *Medical Free Press* a case where a patient “suffered for *fourteen* years from congestion and lachrymation from one eye and photophobia,” these symptoms being aggravated by unsuitable diet. The symptoms began to amend, and soon disappeared after the extraction of a carious tooth.

Mr. Power (*Lancet*, April 9, 1881) gives details of a case of double ptosis, the patient a woman, aged thirty-three.

Dr. Edward T. Ely reports partial paresis of third nerve, in which the patient “complained of confused feeling in right eye which she could not describe—says it began with burning pain in right ear and right side of head; no redness of eye, but the pupil was dilated and immovable, and accommodation partially paralyzed; teeth were found decayed and tender.” Paresis disappeared entirely in one week after the extraction of a tooth.

Mr. Hutchinson gives an account (in Ophthalmic Hospital Reports, Vol. IV, p. 316), of pain in the eyeballs and forehead—severe at times, but not constant, and with such an intolerance of light that he could not test the power of vision. The patient said she had had no toothache, but on examination of her mouth a carious molar was found which Mr. H. ordered removed. All the symptoms “ceased immediately, tolerance to light returned, the eye was no longer irritable; a perfect cure soon followed.”

Prof. Galezowski, the eminent ophthalmologist, in a late lecture dwelt on the close correlation between some eye troubles and caries of the upper teeth.

The ears are likewise often affected, and in various ways, by diseased teeth. Magitot observes that, “partial or total deafness supervenes sometimes, under the influence of caries.” And M. Ed. Vautier speaks of deafness resulting from a painful third molar.

Tomes says that spasmodic closure of the jaws in a slight degree, resulting from the eruption of the wisdom teeth in an already crowded jaw, is of very frequent occurrence.

Salter gives details of a case of chronic trismus from impaction of a lower dens sapientia. The patient (a young man aged twenty-three) had large teeth and a small maxilla, and had suffered for three years with recurrent attacks. The tooth could not be reached, so the second molar was extracted after separating his jaws by me-

chanical means for a week. The trismus did not recur and all stiffness vanished in four and twenty hours. The same author also reports a case of paralysis of the left arm (the patient a young woman aged twenty-four) from the same cause. I will not attempt any explanation of the very noticeable fact that so many of the reported cases are said to be on the *left* side.

Odontalgia, or pain that a patient locates in the teeth, is, without doubt, often caused by some distant disorder, by some surgical operation, and by accidents in which branches of nerves are involved.

Brubaker says :

The quotable cases are not so many as where the teeth produce reflex disturbance, but this fact argues nothing as to the non-existence of a *causal* relation, for it very often only needs a more precise observation to detect facts that appear almost as if made to support a theory.

Dr. Benjamin Rush wrote November, 1802, in a letter from which I have already given an extract :

I cannot help thinking but our success in the treatment of all chronic diseases would be much promoted by directing our inquiries into the state of the teeth in sick people, and by advising their extraction in every case in which they are decayed. It is not necessary that they should be attended with pain to produce disease; for splinters, tumors and other irritants often bring on disease and death, when they give no pain, and are unsuspected as causes of them. The translation of sensation and motion to parts remote from the place where impressions are made, appears in many instances, and seem to depend on an original law of the animal economy.

Now, excepting his remark in relation to the extraction of *all* "decayed teeth" (for we *have improved* on *that* practice), his advice is as definitely pertinent to-day as it was when he penned it. With the additional light which has come to us since his time, coupled with the fact of so many of our profession striving to avail themselves of every help in the treatment of dental and oral diseases, I am confident suffering humanity is being, and will be better served through our ministrations. *Dr. W. P. Dickinson, Minneapolis.*

HOW TO AVOID DARK JOINTS IN SETS OF TEETH.—With a true running lathe, and a coarse and a fine corundum wheel with a half inch face, bring the two front blocks together square, outside and inside. After you have them together, V them slightly on the inside. For the bicuspid make the V a shade heavier, the molars the same as the front. I have no trouble about dark joints, and never use plaster or cement in the joints, as it only leaves a place for bad smells. I use the face of the stone in jointing.

J. A. Houser, D.D.S.

DOES RUBBER EXPAND DURING VULCANIZING?

EDITOR ITEMS:—You, and others, ask me to give my method of vulcanizing without flasks, “if I am confident it could be generally adopted.” That, I do not know. I did not write my article to introduce the method, but to condemn Dr. Snow’s theory that, “If rubber is closely confined a force may be exerted by its *expansion* which the contents of the flask cannot resist. Broken blocks, open joints between the sections, teeth forced out of place; all these annoyances are due to the close confinement of rubber by insufficient gateways.” But, since some dentists have said my article is a lie, I send you an upper set of gum teeth ready to vulcanize. Remove the cast by pulling apart the tin band at the slot. I have cut the hole in the plaster so you can see the rubber is not vulcanized, and the plaster is not a quarter of an inch to the rubber. Saturate the place with water and refill the broken place with batter of plaster. When hardened vulcanize *without band*, at 320° Fahr. for 55’. Not allowing *any* steam to escape till the vulcanizer has *gradually* cooled below boiling. Then remove the cast, and when cold, even in water, cut away plaster, borders first, and then see if it is not proof of what I affirmed in the February ITEMS. At this time it will take too much space to give a minute description how I set up the teeth. However, I will say, I use the rubber the same as “waxing up,” inserting the teeth as warm as can be handled. Also, I have a spatula made to order using it warm to spread and trim the rubber. When “ready for flasking (?)” trim back of model convex shape; immerse in cool water till the bubbles cease; then place on the table with teeth up; after placing a band around it fill with plaster about a fourth of an inch above the teeth; when hardened vulcanize as above stated. While it is rather difficult to set up an entire upper and lower denture, yet in partial, and especially patch work, I think the method when understood will be generally adopted. First, because when correctly vulcanized there is no misplaced teeth, no broken blocks or dark joints, but the case is *sure* to come out the same shape as when imbedded in plaster; second, it saves time and plaster; third, more sets can be vulcanized at a time; fourth, pink rubber can be used when you wish it to stay. *B. T. Radcliff, Paoli, Indiana.*

We have vulcanized the set sent us, imbedded in rubber without a flask, by Dr. Radcliff, and find it, after being vulcanized just as the doctor says. There is absolutely no evidence of expansion of rubber; no cracking of the plaster, misplacing of the teeth, or pressure of the rubber in any direction. The joints of the blocks of the teeth are perfect.—ED. ITEMS.

PHYTOLACCA DECANDRIA.

This valuable remedy is not new to the medical profession, particularly to that school of medicine known as physio-medical, since it has a definite place in *materia medica*. It bears the scientific name of *phytolacca decandria*, and is commonly termed poke root, but I never call it by the common name when prescribing, as some patients might therefore object to it. From the United States Dispensatory I gather the following :

Narcotic effects have been observed, such as drowsiness, vertigo, and dimness of vision. In overdoses it produces excessive vomiting and purging, attended with great prostration of strength, and sometimes with convulsions. In small doses it acts as an alterative, and has been highly recommended in the treatment of chronic rheumatism. A case has been recorded by Dr. Alexander, of Tennessee, in which an obstinate and painful tumor on the face, having some of the characters of cancer, disappeared in the course of three months under the use for that time of a fluid extract of *phytolacca*, given for the cure of chronic rheumatism, which also was greatly relieved by the remedy. Dose ten to thirty minims.

Dr. William A. Spurgeon, of Indiana, speaks of it as follows :

Have used the tincture of the green root in doses of from ten to twelve drops. Have had good results from its use in neuralgia of the head and face. Odontalgia yields to the action of this remedy in a vast number of cases. Where the nerve is exposed or at fault the best results are obtained. It has not failed me in a single case of this character. One patient complained of swimming of the head after using it. Was the *phytolacca* the cause? Have seen a case of chronic rheumatism where "regular" remedies had been employed to no purpose, and where the full round of domestic remedies had been tried and failed—a case of several years' standing, and which assumed a formidable aspect—relieved *at once* by *phytolacca* tincture—twelve-drop doses taken four or five times daily—relief after third dose. One thing is worthy of notice, when relief is obtained it is permanent so far, at least, as time has allowed me to notice. I have used it in six cases of an obstinate character—of painful nerves and rheumatic affections—in all of which it has given satisfaction.

In my own experience with *phytolacca* I have found it very efficient in the treatment of neuralgia, severe odontalgia, especially after a tooth has been filled, and in cases of periosteal inflammation. I give it in doses of from five to ten, and sometimes fifteen drops hourly until patient is relieved, which usually occurs after the third or fourth dose ; sometimes I give it in five-drop doses half hourly. I never give a large dose except in very severe cases ; the danger here being that the patient may be made sick. I have treated several neuralgias with this remedy with very satisfactory results. I have also had several cases of periosteal inflammation with tendency to develop into abscesses, which were counteracted and cured by the use of *phytolacca* before the point of suppuration was reached. I usually administer it in a tablespoonful of water. I have seen it used in a great many nervous affections, and the result has always been satisfactory.

Malcolm W. Sparrow, L.D.S., Toronto, Canada.

REPLANTING TO CORRECT AN IRREGULARITY.

Six months ago Miss M., a young lady aged eighteen years, came to my office to have the following irregularity corrected :

The right upper central and lateral incisors were rotated in their sockets so their distal edges presented anteriorly, their labial surfaces facing to the left. The space they occupied had been somewhat lessened by the moving forward of the cuspid and posterior teeth. I advised her to have the teeth extracted, and, after proper treatment, replaced in a regular position, explaining to her the possibilities of their not uniting and the operation proving a failure. Her consent being gained, I gave her gas and removed the teeth. The roots were crooked, especially the root of the central incisor. We drilled through the backs, removed the pulp contents, filled the foramens with gold, the canals with cotton treated with carbolic acid and oil of cloves, and the drill openings with gutta-percha. Then after grinding the sides slightly so the crowns would stand straight in the space they were to occupy, the sockets were changed somewhat so as to allow the crooked roots to go into their new position. The teeth were then put into a glass of water heated to about 98° F., into which had been dissolved an antiseptic tablet made by John Wyeth & Brother, after a formula suggested by Dr. Carl Seiler. All being now ready, the teeth were driven into their new position. As considerable force was necessary to accomplish this, the patient was again anesthetised, that the work might be thoroughly done. The teeth were now quite firmly fixed in their place, but they were ligated to the adjoining teeth with floss silk, and oxyphosphate flowed over this, the better to secure them until union had taken place, and to guard against the accidental loosening of them during this time. The patient was directed to use phenol sodique as a mouth wash, keeping the gums over these teeth covered with cotton saturated with a dilute solution of it. No pain or soreness followed to speak of, and union by first intention took place. The supports were removed in ten days, and the case dismissed. I have seen it frequently since, and as far as I am able to observe, it bids fair to be a continued success.

C. T. Meaker, M.D., D.D.S., Carbondale, Pa.

I have just received the February ITEMS OF INTEREST. I am much pleased with it; it is full of good sound suggestions for everyday practice. It is far ahead of any dental journal that has fallen in my hands. Inclosed find its subscription price.

I. C. Keller, Grantsville, Md.

CLEFT PALATE.

As those who have performed operations on the palate know, the cleft palate has been, and is to-day, a difficult deformity to make normal, owing, mainly, to false methods of operating. In the September ITEMS (let me say here I wish there were more *Items Journals* printed instead of *Society Journals*), Dr. Marcy, of Boston, gives his method of successfully operating for congenital cleft or soft palate, and it seemed so practical, in the main, that I made use of those features, which I considered essential to success, in this case: Miss Van F., aged twenty, strong and healthy, except nasal catarrh, came to me for dental work. My attention was attracted to the cleft, and I mentioned its possible cure. She then said she had been to New York and Chicago for advice, and had six operations performed in Kansas City, all without deriving any benefit. At her next visit her mother came, and, after listening to the description of how I would operate, she consented to an operation, and soon after the father also consented.

After two weeks' semi-daily treatment for catarrh, I performed the operation, with the able assistance of Dr. J. B. Lewis.

Bichloride mercury (1 to 1,000) was used to make parts antiseptic. In fact, much stress was put on the thorough use of this anti-germicide.

With Allen's septum knife a division of the edges, made laterally, to the depth of about three lines, was completed.

Then we took four shoemaker stitches, to bring the raw surfaces together. A deep, heavy stitch was then taken, about nine lines back from the median line, and the threads crossed, thus forming an X, to relieve the edges from all strain by contraction of the palato-glossi, palato-pharyngeal, and levator-palati muscles. A nasal douche was used often, during the first five days, for washing and cleansing the nasal passages and pharynx with tepid salt water. No nourishment of any kind was taken by the patient for three days. On the fifth day two small stitches were removed; the deep stitch being taut, it was left till the eighth day, when it, and the other small stitches, were removed, and all was thoroughly united except about three lines of the anterior part; but on the twelfth day complete union had been accomplished, and case dismissed.

A 5 per cent solution of muriate cocaine was used freely on the velum about ten minutes before operating, which acted like a charm.

Dr. A. J. Stevens.

SPECIFIC FORMS OF IRREGULARITY AND THEIR TREATMENT.

While principles and methods may be well understood, illustrations of their application in some forms of irregularity will be necessary, that the student may properly comprehend their practical relationship.

So far as ease or difficulty of treatment is concerned, irregularities are naturally divided into two general classes; in one, the irregularity is brought to our notice as soon as it begins to manifest itself, while in the other the deformity is fully established and confirmed before presentation for treatment. In the first class, occurring usually in children, we have the advantages of easy movement and freedom from complications; while in the second, we have to contend with slow and difficult movement and a variety of unfavorable conditions.

For these reasons it is deemed advisable to treat of some forms of irregularity, especially those involving the six anterior teeth of each jaw, under separate heads, according as they present, before or after dentition is complete; for the treatment of one will vary considerably from that required in the other.

INCISOR TEETH ERUPTING OUTSIDE OR INSIDE OF THE ARCH.

Reference has already been made to the fact that normally the permanent inferior incisors erupt inside of the arch and posteriorly to the deciduous, while the permanent superior incisors erupt outside of their deciduous predecessors. From the limited space allotted the lower incisors, there is a stronger tendency to irregularity than with the more favorably located upper ones, although the latter are also often found in a crowded condition, sometimes complicated with torsion.

So long as the lower incisors are within the arch, even though irregularly arranged, they will usually need no attention until dentition is complete; when it will generally be found that nature has almost, if not entirely, corrected the condition.

So, also, where some of the upper incisors erupt slightly outside of the arch, they being still in line, with spaces between them, we need not interfere, for generally the force exerted by the lips and the erupting cuspids will bring them into normal position and relationship.

It not unfrequently happens, however, that from some cause an upper incisor is deflected in its eruption, and appears inside of the arch, or that a lower incisor erupts outside of the arch. Treatment

is indicated as soon as the irregular teeth are sufficiently erupted to enable us to bring the proper force to bear upon them.

Where one or two of the upper incisors erupt inside of the arch, a very ready manner of bringing them out into line is by the use of the "saddle and inclined plane."

It is commonly made of silver plate, gauge 26, swaged in a single piece to cover all of the crowns of the lower incisors and cuspids. At a point where the introverted upper tooth touches this plate, a piece of heavy silver, gauge 22, is soldered in an inclined position to the ridge of the saddle. With this appliance in position, the malposed tooth is easily brought forward into line, through the force exerted upon it in mastication. Where more than one tooth is to be moved, corresponding inclined planes are attached to the saddle for each.

To insure a close fit and stability for the piece, it is well to scrape slightly the neck of each plaster tooth on the model, both on the lingual and labial aspect, before casting the die. With the appliance properly constructed, so as to bind upon each tooth at its neck, it will usually retain its position during the ten or fifteen days necessary for bringing one or two teeth into place.

To avoid the necessity of removal for cleansing, and the possible non-replacement of the appliance by the patient, as well as to secure it in position more effectually, the writer has been in the habit of cementing it to the teeth with phosphate of zinc, in the same manner as crown and bridge-work is attached.

Two principal objections have been urged against this appliance: One, that by thus opening the bite, the posterior teeth will elongate; the other, that the patient may avoid biting upon the plane. These objections have no validity, as is shown by actual experience.

The short time that the bite is kept open is not long enough to permit of any perceptible elongation, and the patient must and does bite upon the plane in mastication, because it is the only point where occlusion is possible.

Where a lower incisor is locked out of the arch by an upper biting inside of it, both teeth can be moved in opposite directions and brought into line by means of an appliance devised by the author many years ago. It is constructed as follows: A band of thin platina (No. 29, Am. gauge) is bent to encircle and fit the protruding lower incisor, and the ends soldered. A piece of ordinary gold plate is then bent double to form the plane, and spread apart at its ends to grasp the band on the lingual and labial surfaces, to which it is soldered. It is next placed upon the tooth to see that

the adjustment is correct, removed, lined with phosphate of zinc, and pressed permanently into position. If the teeth are in close contact it is well to allow the fixture to be worn a day previous to cementing, for then the teeth will have been pressed apart, and the replacement with cement will be more easily accomplished. The cement not only lines the band, but fills up all the space between the plane and the tooth, thus giving greater resistance and strength in biting. Its advantages are its small size and absolute fixedness. When the correction has been accomplished, it will be necessary to cut the band to remove it.

Another plan of accomplishing the same end is that devised by Prof. C. N. Peirce. He simply attaches ligatures to several or all of the lower incisors, and makes these fast to the molars on either side. The ligatures being attached, and drawn tight while dry, will, under moisture, contract and draw the incisors inward. This operation is continued until the lower incisors reach a position inside or back of the malposed upper teeth. The ligatures are then removed, and the lower teeth, in gradually resuming the position they formerly occupied, will carry the inlocked uppers with them.

Where, for any cause, it is desirable to confine the means of correction to the jaw in which the irregularity exists, as, for instance, where the upper laterals are inlocked, a simple plan is to take a piece of platinized gold, about one-eighth of an inch in width and long enough to more than cover the four incisors, and punch or drill four holes in it, two opposite each of the laterals. The bar being laid in position on the labial surfaces of the centrals, the laterals are securely ligated to it, the thread passing through the holes. The spring of the bar and the contraction of the moist ligatures will move the laterals into position in a short time, the ligatures being renewed every two or three days.

A more satisfactory way of performing the operation is to solder one end of the bar to a platina band made to encircle one of the laterals and attached to it by oxyphosphate. Arranged in this way, the bar has but one free end, which is the more easily ligated to the other lateral.

—From Prof. S. H. Guilford's *Orthodontia*.

In St. Mary's Hospital is a child about a fortnight old, in whom the sternum and costal cartilages are imperfectly developed. The heart is seen distinctly through the thin cutaneous wall of the chest. The shape and size of the auricles, and ventricles, with the filling of the auricles with blood, are quite as visible for all practical purposes as if the organ was completely exposed to view.

DISCUSSION OF BRIDGE WORK.

[In the Illinois Dental Society.]

Dr. Crouse: I do not think bridge work can be taught in a State society by clinics. What is done at clinics simply gives those members who have not studied the question an idea of how to do the work. It is a particular kind of work, that has to be done with care and skill, and must come together like the pieces of a watch. I have in some instances made bridge work where I would not approve of it now. Bridge work is a failure unless it has an attachment at each end, though it may be safe to carry one tooth beyond the attachment and fill the space if there is not much force coming on it. In a mouth with the teeth all gone from the cuspid to the wisdom tooth, a bridge can be made serviceable, and it is fortunate for the individual who has that wisdom tooth. I have had many of that kind, and they prove almost always satisfactory. Bridge work cannot be made successfully without much hard work. An important point is to make the attachments right—to fit accurately and nicely, so that the gums are not irritated.

Dr. A. E. Matteson: I fully agree with Dr. Crouse in the remarks made, and especially in what he says about the difficulty of constructing bridge work and crowns. It has to be done with skill and the adjustment must be accurate.

I agree with him also as to covering the crowns of molars. It is difficult to remove bridge work or crowns when attached with the zinc cements without cutting the appliances all to pieces. Gutta-percha is an excellent material for fastening crowns and bridge work. My method of doing it is something like this: Suppose it is a molar. A crown is constructed to fit as closely as possible the periphery of the root at the gum. First, I use warm soft wax in the shell, which gives me about the measure of the amount of gutta-percha I will need. After grinding (dry) I apply oil of cajeput both in the shell and root; warm the gutta-percha and insert in the shell, heat the shell as hot as can be held in the fingers and press it into position. Have the patient bite on it, and if there is too much gutta-percha, remove before it gets cold, heat, and apply again. I seldom have to take from or add to the gutta-percha.

One great advantage in using this material for anchoring crowns is, that in after-trouble requiring treatment of the root, or a proximal filling needed on an adjoining tooth, the crown may be easily removed by the application of heat and as easily replaced. The oil of cajeput is used only as a solvent on the outside of the gutta-percha—as a lubricant, you might say.

With regard to lengthening the bite, I will try and illustrate my method by a case which I have just finished. There were two central incisors worn down on the front surface to the gum; the laterals were missing; cuspids were worn off three-fifths their length; the pulps were dead in these and in the central incisors. The first bicuspid had proximal cavities on their posterior surfaces. The second bicuspid had proximal cavities on both sides. There were two molars gone, third molars remaining. I made crowns or shells for the molars, burnished thin platina over the ends and into the cavities of the bicuspid. The buccal surfaces of these teeth were left exposed. The crowns on the molars were built up by making bites of the right length. I built the bicuspid up with wax over the platina caps, letting the patient bite into the wax, then I carved the teeth in contour from the wax articulation on one end toward the platina plate which had been burnished over the ends of the teeth and into these cavities. I wrapped No. 30 gold foil around the wax form, and into these cavities filled with wax, a short tube of platina filled with prepared chalk. This tube was large enough to receive the end of the bridge bar. I filled this tube with a solution of chalk and water; also the surface next to the teeth to prevent the gold from flowing where it was not wanted. These caps were then invested in asbestos fiber and plaster, the wax melted out and 20k. gold flowed in its place.

Dr. K. B. Davis: We all have patients (very frequently young) who have lost a few teeth, and if the roots are removed, they would be compelled to wear plates all their lives; whereas, by putting on a bridge plate this could be obviated, and we could render them satisfactory service. There are many dentists who have not yet learned how to make those plates. As Dr. Crouse says, it is difficult to do it properly, but I think any dentist can learn to make a bridge plate if he will persevere and has the necessary appliances, and in justice to his patients he should do it.

I made one containing five teeth for a lady who had been wearing plates with little satisfaction for ten years. The plates would not stay up. Some people cannot keep a suction plate in place very long. The bridge plate I made for her proved successful, and it seems to me no time should be lost by dentists in learning to do this work.

Dr. Brown, of Duluth, Minnesota: Dr. Crouse referred to a lower bridge from bicuspid or cuspid to the third molar as being a satisfactory bridge when finished, but he said nothing about how to get the bridge there. Those of you who have had anything to do with bridge work, know it is a difficult place to put a bridge.

The molar almost always tips forward and the bicuspid backward. Sometimes, of course, that does not make a serious difficulty, but frequently it does. The space at the necks of the teeth is much greater than at the crowns, and grinding them off is not always advisable.

To overcome this difficulty I first fit a band tightly around the molar, on the front side of which I solder a little V-shaped piece which will give me a perpendicular surface. If necessary, I do that on the tooth in front, and to prevent the bands from slipping downward, I make a groove across the surface of the tooth which receives a small wire or strip of gold plate. I cement the bands in position, then fit my crowns over these, and it makes a bridge.

Dr. Cushing: Dr. Crouse spoke of the importance of exercising judgment in determining when and where these appliances should go. That is the point I wish to emphasize, and I want to caution young men that they should do bridge work with greater care. Do not try to put in a bridge every time there is a possible chance for you to do so. If you do you will come to grief, and your patients will not bless you. Unless you can make your bridges with crowns on two abutments, they will probably fail very much sooner than you anticipate. The method suggested, which I have seen practiced by Dr. Wassall to some extent, of covering the cuspid and leaving the face of the tooth quite clearly exposed, may be generally successful if the adaptation is perfectly made. Unless the crown covers the abutment completely, I have little confidence in the permanence of the appliance. Bands on the teeth will destroy them. I want the young members of the profession to bear these things in mind, because there is a strong tendency for you to take up bridge work. You become infatuated with it, and a young man going into a new locality and attempting to build up a reputation on that line of work will be sorry he made the attempt.

Do not put in a bridge with but one abutment. It will not stand; it is bound to fail. The strain is so great that the tooth will be loosened on which the abutment rests, and it will soon come out. Even if you are putting in only one tooth with one abutment, it will fail. There might be a case in which you might be justified in putting in a single tooth on an adjoining tooth, but it would be extremely rare. Do not promise your patients too much in the construction of bridges. A man that expects two teeth, with the best constructed bridge, to do the work of eight teeth must be lacking somewhere. It is not possible. While we acknowledge the usefulness of bridges, they are very destructive if not put in with the best of judgment. Our young practitioners do

not stop to consider that one or two or three teeth cannot do the work of the entire arch.

Dr. A. E. Matteson: I wish to say in regard to two teeth supporting four, that in September, 1881, I put on two incisors just as I have described. I have seen them within a month, and the front teeth are as firm now as when they were put on. I am not advocating the indiscriminate bridging of teeth; it requires much judgment. Before this society five years ago I showed mounted crowns and a bridge, and in that bridge were two cuspids supporting four incisors. That was a specimen case. These did not band the root at the front, but extended slightly over the cutting edge in front.

PREPARING CAVITIES AND COPPER DISKS.—The success of filling cavities of decay in teeth is dependent almost wholly on having the cavity properly prepared, the overhanging walls of enamel cut away, cutting off the feathered edges, removing all acute angles in shaping the cavity, so that when gold is condensed in it the sharp edges will not be pulverized by condensing gold into the cavity. That is generally conceded. We all know of the excellence of the minim corundum disks for rounding borders of the cavity, and cutting away weak walls. If these disks are properly used, the edges will not be pulverized by the condensation of the gold, the cavity will be filled more expeditiously, and the borders well defined.

I have been using for the last year or so copper incorporated with diamond dust. It is made of the same material that the so-called diamond disk is made from. It is more expensive than the corundum disk but will last longer.

These disks are to be made indispensable. For cutting the thin walls of proximal surfaces, and shaping the cavity, they are much better than sand paper, because they cut straight and clean and do not wear out easily. One of these copper disks will last for five years in every-day use. If you find the disks are not cutting properly, keep them wet. If they are used dry, copper will by and by cover the entire surface, and the diamond dust seems to be embedded in a layer of copper. If they are kept wet they will cut freely. Glycerine may be employed instead of water, it is more lasting.

Dr. Taggart has an instrument by which the corundum disks may be easily made, and so they come very cheap. Every practitioner may have several dozen on hand all the while.

—Dr. T. W. Brophy, in *Ill. Society*.

TREATING AN ABSCESS.

[Remarks in the First District Society of New York.]

Dr. Wm. Jarvie: Mr. President, I would like to speak of a little appliance I have had in use for the past three years, and from which I have derived much satisfaction in operating on pulpless teeth. It is used where the root-canal is somewhat restricted in circumference, and though you feel the necessity for going through the foramen, it is not safe to use any of the ordinary drills. Yesterday a gentleman called with a lower incisor worn away to the pulp. The pulp was dead, and there was an abscess at the end of the root, which gave much pain. I opened into the root-canal, and found I could not go through the foramen with any of my finest broaches. But I have a drill, no thicker than a hair of one's mustache, which is made of the finest piano-wire, and is nearly as flexible as a hair, and it will follow the tortuosities of almost any canal. With that I readily ran through to the end of the root. The obstruction may have been a particle of coagulated pus that closed the lower part of the root-canal, but whatever it was it opened readily to this drill. It is a valuable aid in operating on the class of teeth I have referred to. It is fastened in a fine wire holder.

Dr. Dean: Mr. President, Dr. Jarvie's remarks in regard to drilling through the foramen tempt me to give a little experience of mine in that direction. I have been for a number of months treating pulpless teeth, both those that are filled with matter and those that are dry, without going through the foramen in any case. I have treated scores, I think I may say hundreds, during the last two or three years, and in no case was there a blind abscess or fistula. I have simply cleaned out the canal as well as possible and introduced hot air, as hot as the patient could bear it. At first I used carbolic acid, then I discarded that in favor of oil of cloves, and now I use pure cinnamon oil. It is rare that a patient suffers much pain after leaving the office.

I think the trouble at the apex of the root and in the surrounding tissues comes from some cause inside of the tooth. Remove that cause, and nature will generally overcome the effects of it. Give nature a fair chance, and she will often do better than we will if we interfere with her. It may be we should sometimes follow with peroxide of hydrogen or carbolic acid to clean out the fistula, but in my practice I have not found it necessary; therefore, I think it is unwise to complicate the case and prolong the treatment.

In chronic cases, especially in molars, it is very difficult to effect a cure.

—Cosmos.

CROWN WORK AT THE BERLIN CONGRESS.

In the way of crown work, there was a demonstration of the Richmond crown, by Dr. R. W. Starr, of Philadelphia, who confines himself entirely to crown and bridge work, and whose name is well known on both sides of the Atlantic in that connection. As there are various points of interest in the methods employed, I hope you will pardon me for giving a somewhat minute detail of the operation. The tooth was a right central incisor with a distal cavity, having an exposed pulp, and the distal corner broken off. The operator stated that he never used arsenic except in back teeth, and also that teeth may be cut off with hardly any pain without its use. The tooth was nicked on both sides, labial and palatal, with thin discs, and cut off with an excising forceps in the usual way. Then taking a hickory peg, one end whittled down to somewhat less than the size of the pulp canal, the point was dipped in carbolic acid and driven home with a smart tap, producing evidently little pain, the projecting end being then twisted off. (Since coming home, I have tried this method once or twice, and the results incline me to believe that where in a single-rooted tooth you have free access and a pulp canal free from secondary deposit, especially at the entrance, this is a much better method, because less painful, than the ordinary one of removal by a nerve broach. Dr. Harlan, of Chicago, a short time ago, gave his experience, with the result that the majority of the patients left him, and some threatened him with an action for damages. These, however, were probably for filling, and the conditions much less favorable than when the pulp and pulp cavity are completely exposed, as in excision of the crown.) The root was trimmed entirely with the corundum discs, beveling especially the palatal portion, which was not ground down to the gum level. The diameter of the tooth was then taken with wire in the usual way, but instead of cutting it at the lap, which is the direction in the books, it was cut opposite to it and the divided ends straightened out, the twisted portion thus forming a convenient handle. One of the ends of the wire being shortened by about one-sixteenth of an inch, a piece of coin gold, No. 29 of the American gauge, and about one-eighth inch wide, was cut off, the ends placed edge to edge, and soldered in the Bunsen flame, forming the collar. This was then placed on the root, and, after a little adjustment, was forced up to fit tightly. It was then taken off, the gum edges beveled, the sides being also filled concave, while the other edge was bent outward slightly. Having been again placed in position, it was ground down to the level of the

stump. A piece of plate of the same thickness as the collar was then placed on the top, held by a clamp and soldered. The superfluous plate having been trimmed off, the cap was finished and ready for adjustment. The root canal, with the remains of the wooden peg, was then drilled out deep enough for the pin, the end, however, of the peg being allowed to remain as a permanent apical plug, the operator stating that the pulp was literally displaced or knocked out by the peg—quite a new light to me, who always thought that the invariable practice was to remove the whole of the peg along with the pulp, as soon as it had been driven up. The cap having been put on, a sharp point was forced through it, opposite the root canal. A piece of gold wire, in default of a platinum-iridium one, was then passed through the hole in the cap, so that it was held tightly in place, and did not require the aid of wax to retain position. Taking the cap off, the pin was soldered, and the tooth was then fitted to the cap, the neck overlapping the gold in front, the whole of the adjustment being done in the mouth, so that there was no impression taken, from beginning to end. The tooth, cap, and pin were then put in a mixture of asbestos and plaster, and soldered. To attach the crown, Dr. Starr used oxyphosphate, which he stated did not pack in pressing up into position, the excess oozing out readily and not requiring a vent hole. As to the time required for such an operation, he stated that a few minutes over an hour was generally sufficient.

Dr. Melotte, of Ithaca, another well-known authority, made a small bridge of one tooth, a lateral incisor, where the root had been extracted. As this demonstration was carried on simultaneously with the one just mentioned, I was not able to follow the detail so closely. A nicely fitting gold band was made to fit the cuspid which was sound, about one-eighth of an inch being the width shown in front. To the side of this, the backed tooth was soldered with a small spur on the other side, resting against the back of the central, also a sound tooth.

—*British Journal.*

A BAD PLACE TO DIE IN.—Dr. Cuno Dix, a dentist of New York, died from heart disease on Sunday afternoon. He had gone into a Third avenue liquor-shop, as was his custom. He was seen to pick up a German newspaper, as though he intended to read. A few minutes later the bartender noticed that the old man's head had fallen backward over the back of the chair. An examination showed that the dentist was dead.

TO OBTAIN PROPER OCCLUSION FOR GOLD CROWNS.—After placing a suitable ferrule of gold on the tooth or root to be crowned, see that the gold will not interfere with the proper closing of the teeth, but rather have it a trifle too short, so as to make allowance for the gold cap which is to be united with the ferrule to complete the crown. I obtain suitable caps by swaging thirty-two gage pure gold in a crown die made for the purpose, then flow twenty-karat gold solder into this cup until it is level full. Now place this cap, which represents very nicely the cusps of a natural tooth, on the ferrule, and hold in place with the pliers, while the patient is instructed to close the teeth together. It is then easy to see what alterations are necessary, and they can be made in a few moments, so that the occlusion may be made perfect. The crown may be completed the next moment after removal from the mouth, by holding the cap and ferrule together while the heat is applied to a sufficient degree to sweat them together without the addition of any more solder, and when this is done you know you have a crown that will perfectly articulate with its antagonists.

This method does away with taking impressions and articulations, and for that reason it simplifies the operation.

Hoping this may prove "news" to some of your readers,

A. W. McCandless, Davenport, Iowa.

Since Harlan introduced peroxid of hydrogen as an agent in the treatment of pulpless teeth, much success has followed.

For his continued and persistent experiments since, with other drugs and chemicals applicable to these and other conditions where medicaments are needed, and culminating in that admirable classification and definition of last year, he should merit our highest commendation and praise.

Prior to this time, filling root canals was varied in method and material, and attended with many uncertainties and failures.

Dr. J. W. Prickett.

The tooth transplanted from a bell-boy's mouth to a lady's, the full description of which is given in the *Missouri Dental Journal* of 1882, on page 245, was extracted a few days ago, having done faithful service in its transplanted socket for *ten years*. The roots were considerably absorbed; also the external plate of the socket, which made it unfavorable to implant another tooth, so a "dummy," attached to a gold crown on an adjoining root, was substituted.

Wm. N. Morrison, St. Louis.

HOW TO MAKE A SMOOTH PLASTER MODEL.—Trim the rim as far up as you wish the plate to run, shellac the model (have your shellac thin) then give the impression a coat of collodion (allow the collodion to set fifteen or twenty minutes before running), mix the plaster as stiff as you can run it. When you take it apart, you will find you have a smooth, hard model. If the impression has become dry, flush it with water before running. You can use the collodion on the modeling compound with the same result.

J. A. Houser, D.D.S.

A NEW MATERIAL FOR POLISHING STRIPS.—Almost every conceivable material has been suggested for polishing fillings or the proximal surfaces of the teeth. I have found a very suitable material for this purpose in the tracing-cloth used by architects. The cloth is extremely tough, very thin (thinner than anything I know to be used for polishing fillings), pliable, and retains these qualities when moist. The tracing-cloth can be procured of any dealer in art materials, or architects' supplies, and of some of the more extensive stationery dealers. The cost for the 36-inch width is 50 cent per yard. Try it.

—*Dr. L. Otlofy, Review.*

I esteem bridge-work, properly designed, so as to secure neatness, lightness and strength in the hands of a truly artistic dentist, as the most advanced method of supplying partial dentures. Where teeth are lost and there are good adjoining teeth, I would prefer to put in a permanent bridge to supply the loss, anchored and hermetically sealed with cement. Always allow it to bear on the gums, where you have to put a blank tooth, where a root is gone. The indication would be to have it press directly on the gum, so that when the occlusion in the bite was attained, it would not be painful; and even if it were a little uncomfortable for a day or two, I would not regret it. *Dr. Wm. H. Atkinson.*

The journalistic literature of our profession was inaugurated in 1839, by the publication of *The American Journal of Dental Science*, the first periodical in the world devoted exclusively to the science of dentistry. To-day our magazines and dental journals form an encyclopedia of dental knowledge, furnishing information in every branch of our art.

What a history is this to come within the compass of an ordinary life-time? But yesterday a few poor pretenders; to-day a bright array of accomplished, educated practitioners.

Dr. W. H. Sedgwick.

About five years ago a gentleman came to me saying, "I understand you can cure an abscessed tooth, and I have come to you for that purpose." I found a nicely filled tooth, but the inflammation around was very great. I took a lancet and opened the abscess high up, and it discharged profusely. The next day it was still discharging pus. I opened it again, and again the third morning. The fourth morning the discharge had ceased. I then removed the gold filling, cleaned the pulp cavity, and treated it simply with chloride of zinc and alcohol. The relief was immediate, and the abscess was cured in a few days. The tooth for the five years since has given no trouble.

Dr. Spooner.

Dr. Justus E. Gregory, a well known physician of Brooklyn was killed on October 25th, by an overdose of chloroform. He had been accustomed to inhale this anesthetic for the relief of facial neuralgia. On the evening of his death he inhaled a dose of twenty drops on a handkerchief, he felt some relief but called for another dose, and five minutes later he was found dead. Dr. Gregory was forty-nine years of age. He had been a surgeon in the army during the war of the rebellion.

—*N. Y. Medical Record.*

CENTRAL DENTAL ASSOCIATION OF NORTHERN NEW JERSEY.—President, C. W. F. Holbrook, D.D.S., Newark; Vice-President, H. Iredell, D.D.S., New Brunswick; Secretary, S. S. Hawley, D.D.S., corner Warren and Thirteenth streets, Newark; Treasurer, Chas. A. Meeker, D.D.S., 29 Fulton street, Newark. Executive Committee: George E. Adams, D.D.S., Chairman, South Orange; R. M. Sanger, D.D.S., East Orange; S. C. G. Watkins, D.D.S., Montclair; W. L. Fish, D.D.S., Newark; B. F. Luckey, D.D.S., Paterson.

EDITOR ITEMS:—The eighth annual meeting of the Maryland Dental Association, just closed at Baltimore, elected the following officers for 1891:

Dr. Cyrus M. Gingrich, President; Dr. B. Holly Smith, First Vice-President; Dr. Bernard Myer, Second Vice-President; Dr. F. F. Drew, Corresponding Secretary; Dr. W. W. Dunbracco, Recording Secretary; Dr. T. H. Davy, Treasurer. Executive Committee: Drs. C. C. Harris, Jno. C. Uhler, and G. Marshall Smith.

W. W. Dunbracco, Secretary.

Monthly Gossip.

BY WM. E. BLAKENEY, D.D.S.

THERE IS NO ORGAN of the body that has such a feeble hold on life as a dental pulp.

DR. BRUBAKER cites a case of amaurosis of twelve years' duration, cured within a few days as a result of extracting a tooth.

A SCIENTIFIC GENTLEMAN has been microscopically overhauling a hailstone, and finds that an infinitesimal speck of ice contains no less than seven hundred bacteria.

DR. DELEVAN, who has devoted much time and thought to the question of adenoid hypertrophy of the pharynx, says that adenoid growths are not always associated with mouth breathing.

"WE KNOW," says Dr. Morrison, "that decay occurs from the outside only, and when the secretions are clean and pure, caries do not occur." How about the laws of heredity, doctor?

DR. EAMES says that the physiological antagonist of cocaine is nitrate of amyl, and recommends that the pearls, which are little glass capsules, should be used. These should be crushed in a napkin and inhaled.

"SLEEP," says a well-known writer, "is a wonderful preventive of disease, better than tonic regulators and stimulants." This is very true, painfully so to those who cannot enjoy sleep without the use of a "regulator" of some kind.

"THE TENDENCY IN ENGLAND," says the editor of the *International*, "seems to be now to drive all Americans from practice in Great Britain." This accomplished, John Bull will be afflicted with toothache, and this ailment will be punishment for his avarice.

DR. TAFT, at a meeting of the Harvard Odontological Society, mentioned a case of capping the pulp of a bicuspid while it was bleeding profusely and filling it at the same time. The work was done by a prominent dentist, the Dr. said, and the tooth has been comfortable ever since.

"WHEN the tooth structure is good," says the *Archives*, "and the patient will permit it, soft gold properly inserted in the permanent teeth of children will give more satisfaction to the dentist and patient than any known filling." This has not been our experience. As a rule, amalgam fillings properly prepared and inserted have been the most satisfactory to all concerned.

THE report of "The Tuberculosis Commission," of the University of Pennsylvania, has been issued in the form of a bulletin in the *University Medical Magazine*. This contains a full summary of the clinical results achieved up to December 15th. The report says: "In regard to the nature of the new remedy there is absolutely nothing known." Excepting dearly bought experience, it might have added.

"At a Philadelphia hospital," says the *Archives*, "local anesthesia for minor operations is obtained by combining ten parts of chloroform, fifteen of ether, and one part of menthol, and using the mixture in a hand atomizer. After one minute's application of the spray such a degree of anesthesia is produced that incisions can be made for the removal of growths, opening a felon, or an abscess without causing pain." We have tried this formula for lancing sore gums, and it proved a perfect failure.

AN important discovery of an antique tomb has just been made outside the Salara gate. The grave contains two sepulchral urns, the inscription on one stating that it contained the ashes of the Emperor Nero, and the other those of Acte, his companion, but that the ashes were conveyed to the cemetery of the Dimitrius family, in which were Nero's ashes. The inscription adds that Ecloge wished her ashes to lie near those of the Emperor.

A CURIOUS SCIENTIST has been indulging in a little mathematical speculation about the minute parasites which are found in the hairy part of a tiger's foot. He says: "They constitute one of the most wonderful curiosities I know of in the animal world. The parasites are so small as to be almost invisible to the naked eye, and yet each is a perfect counterpart of the tiger—head, ears, jaws, legs, claws, body, tail,—all are there." Well, we prefer to take the word of the scientist rather than investigate the subject ourself.

DR. WILLIAMS, in speaking of the third molars at a society meeting, said: "There are several things about them in which they differ from other teeth, and one thing that I have noticed is that the dentine is apt to be more sensitive than the average of dentine of the other molars; in fact, nearly resembling pulp sensitiveness." This peculiarity, doubtless, comes from the environment of the teeth. Teeth crowded out of their normal position are usually more sensitive than those which are regular in the dental arch.

FOR THE TREATMENT of hypertrophy of the gums, Professor Ingersoll recommends the following: "Take pointed scissors and remove the long points of gum growing in the inter-spaces of the

teeth, down to the level of the gum on the labial faces of the teeth; extend the cutting with the scissors or bistoury, along the buccal sides of the bicuspid and molars, if needed. Then reduce the inflammation with stimulants and astringents; wood creosote and tannin are among the best. They do not combine, but they act harmoniously when used together on the same pledget of cotton."

DR. STANTON read a paper before the Harvard Odontological Society, entitled "The Function of the Odontoblast," which elicited a very interesting discussion. In reply to the assumption that recent demonstrations had shown that the enemies immediately causing decay of the teeth are to be found in their environment, Dr. Stanton said: "The pulp is, to a great extent, the remains of an embryonic organ; by another stretch of the imagination you may regard the odontoblastic cells as the remnants of an embryonic cell. It is well known that in the formation of the adult tissue all over the body there is a return to the embryonic state before the permanent condition is formed; in other words, there are embryonic cells which, to some extent, go to the formation of tissue; but, before they reach perfection, there is a reaction, and these cells, instead of attaining completeness, take on a reformatory action, and proceed to form the adult tissue until the type limitation has been reached." * * *

HOW SHALL REGULATED IRREGULAR TEETH BE RETAINED IN PLACE?—EDITOR WELCH:—I wish to congratulate you on the appearance of *ITEMS OF INTEREST* for 1891. It is by far the most interesting of all the dental journals. I take with it *Cosmos* and the *International Dental Journal*, but neither are more carefully read than *ITEMS*. I have forwarded my subscription to the publisher, and given my name as a permanent subscriber.

I noticed a letter in the current number from Dr. Ramsden, of Philadelphia, in which he cites a case of a child being born with teeth.

A case of that kind must have occurred in this country years ago, as at Eastport, a small town not thirty miles from here, there is a tombstone in the cemetery bearing an inscription, a part of which is—"born with teeth."

I have nearly finished a case of irregularity in which the six anterior teeth have been drawn back. Would you kindly suggest the best appliance for retaining them until firmly set?

Frank Holmes Moore, D.D.S., Calais, Maine.

Our Question Box.

WITH REPLIES FROM OUR BEST AUTHORITIES ON DENTISTRY.

Address all questions for this department to DR. E. N. FRANCES, Uvalde, Texas.

Question 14. *What is the best course to pursue with abscessed teeth in first dentition?*

Would be governed by the condition of the mouth.

H. A. Lawrance, Athens, Ga.

I would extract.

J. C. Storey, Dallas, Tex.

Cleanse out the putrescent pulp, and pack roots with cotton moistened with Robinson's remedy, and fill with gutta-percha.

C. S. Stockton, Newark, N. J.

Should an abscess occur at any time on the four front teeth, extract them; should an abscess occur on the molars before the eruption of the permanent six-year molars, the tooth should be treated, filled, and non-antagonized, and retained until the proper time to extract.

J. T. Crawford, Nashville, Tenn.

If the patient would permit, would treat and save.

J. H. Collins, Granville, N. Y.

As a rule, I would extract.

G. W. Collier, Beaumont, Tex.

If abscess is open, would use campho-phenique, or weak solution of carbolic acid; if not, would apply counter-irritants to hasten, and, when suitable, lance; then treat, and if not successful, extract.

E. A. Floyd, Paola, Kan.

The treating of children's teeth depends on the surroundings in each case, age and conditions. What you can easily do for one, you cannot for another. I never attempt to treat abscessed front temporary teeth; let them stay as long as possible, and when too bad, extract. Abscessed molars and bicuspid—when I can control the patient—I treat the same as with permanent, and with same remedies, and I find them yield to treatment, I believe, more easily than the permanent. *Geo. W. McElhaney, Columbus, Ga.*

The pathological significance of abscess in teeth of first dentition is very grave, and should not be allowed to occur; however, that is often beyond the dentist's control for many reasons. If the time for its successor is near at hand, remove the abscessed temporary tooth; if the permanent tooth is not to appear for some time, treat with pure wood creasote and fill with gutta-percha, and, in some instances, amalgam.

John Coyle, D.D.S., Thomasville, Ga.

Question 15. *In preparing a central incisor for Logan crown, the drill was carried through the apex of root, causing pain and hemorrhage. The crown was attached at once with amalgam, and patient informed that it would tighten and last forever, if un-*

disturbed while setting. In a few weeks the crown came off, and the patient wishes it replaced. The root is filled with blood, and bleeds on the slightest provocation. How should this be treated before crowning again?

I would simply extract the root. *H. A. Lawrance, Athens, Ga.*

I would fill the root with oxychloride or lead, if I could be sure of reaching to the apex, and no further; replace the crown and dismiss the patient.

J. C. Storey, Dallas, Tex.

The hemorrhage should be stopped and the apex of root filled with gutta-percha, and then the crown can be reset.

C. S. Stockton, Newark, N. J.

I would wash out thoroughly with peroxid of hydrogen, followed by 1-1000 bichlorid mercury; then fill with cotton saturated with eucalyptol, dipped in iodoform. When it will tolerate this for a week or ten days, I would fill the apex with chlora-percha, with a sprinkling of iodoform, after freely using hot air. Would not put the crown on until sure of success.

J. H. Collins, Granville, N. Y.

I would drill carefully through the apical foramen, using a drill one size larger than the one formerly used, to ascertain the exact size of the opening; treat with antiseptics until the external tissue is healed; then take exact measurement of canal, swage a piece of lead or tin into a matrix a size larger than the foramen, one-eighth of an inch long, and carry it by measurement to place at apex, and then crown.

G. W. Collier, Beaumont, Tex.

I would treat root according to conditions. If the wound through the apex discharged blood, I would use sub. sol. ferri, the same as I would to stop hemorrhage after extracting, when necessary; if pus, I would treat with campho-phenique, peroxid of hydrogen, or carbolic acid. After healthy condition is reached, would enlarge the canal to within one-sixteenth of an inch of apex; then fill that one-sixteenth with gutta-percha canal point. This gives you a shoulder at the bottom of the enlarged canal; this I would cover with a piece of gold plate, held in place by cement. When perfectly solid, would place crown with cement or amalgam.

E. A. Floyd, Paola, Kan.

I would clear the cavity of all the amalgam, thoroughly wash with peroxid of hydrogen, followed with bichlorid of mercury; pack loosely with cotton saturated with engenal, followed, in a day or so, with another wash-out of bichlorid of mercury; then dry out with hot air, followed with Evans' root dryer, and then make a hollow lead core to fit end of root as near as possible, fill the hollow cone with gutta-percha, press home to place, and replace the crown with oxyphosphate.

George W. McElhaney, Columbus, Ga.

First thoroughly cleanse the root with peroxid of hydrogen, carry a piece of cotton, saturated with a ninety-five per cent solution of carbolic acid, to the apex of root, and seal it up with gutta-percha. At the expiration of one week remove the dressing, and introduce iodoform dissolved in carbolic acid; wait another week, then insert cone of gutta-percha in apex of root, and proceed to crown. *John Coyle, D.D.S., Thomasville, Ga.*

After the root is in a condition for crowning, and if a large drill was used, get correct measurement of root, flatten the end of a small gold wire, something in the form of a spoon excavator, the flattened portion to be finished to exactly fit the hole at apex of root. Now bend the flattened end at nearly a right angle with the shank, leaving the shank of sufficient length to be easily grasped and removed if necessary in fitting, and also to bend over the cervical wall, to prevent displacement later on. Next, drill a groove of sufficient length and depth to free the wire from the crown-pin, if a large one is used, and place the fixture in the root with the spoon formation at the apex, and bend the protruding wire over the edge of root. If a large wire is used, file the end thin, for the purpose of easy bending. Now press a very small pellet of gutta-percha against the fixture at apex of root, and, after packing nicely in place, cover with a layer of oxyphosphate. Cut wire off even with root, and attach crown with cement or gutta-percha. Do not cut wire too short for the sake of economy, as that crown may break some day, and you will want to replace it.

E. N. F.

QUERIES FROM VARIOUS SOURCES.

In placing dam, for approximal cavities in bicuspid and molars, it often slips from the bicuspid while placing it on the molars. How can I overcome the difficulty?

INQUIRER.

Soap the dam, place in position, and secure to back teeth first; you will find it easier.

I have been treating some time a molar for abscess, and thus far I have been unable to reduce it. There is quite a discharge from the root. What shall I do?

O. R.

You do not state the location of the tooth, so we cannot answer. If it is a superior, there may be trouble with the antrum.

I have a pair of lower molar forceps, and in extracting, the teeth are broken off at the gum where the forceps grasp them. It seems to make little difference whether the teeth are badly decayed or not. I use no more force on the handles than is necessary to prevent the forceps from slipping.

C. L. S.

The beaks of your forceps are too sharp, and cut teeth off in extracting. Dull them with a fine corundum point and your trouble will cease.

Kindly inform me in "Our Question Box," ITEMS OF INTEREST, what Mayo's vapor is, and oblige

STUDIOUS STUDENT.

Mayo's vapor is a secret preparation, put up in cylinders containing from one to five hundred gallons each. Its manufacturers claim: "A vegetable anesthetic free from the objectionable features peculiar to other anesthetics," possessing the following properties: "Hypnotic, diaphoretic, stimulative and antispasmodic." Its virtues are appreciated by a few.

What success usually follows the extraction of any of the upper or lower incisors or cuspids for the relief of abscesses at point of root; the tooth being filled and replaced? If it is a justifiable proceeding, what precaution is necessary? JUNIOR.

The extraction for the cure of abscesses we consider justifiable only in exceptionable cases. The practice with some is to extract with as little disturbance of the alveolus as possible, thoroughly treat the socket and root with antiseptics, and replace after removing a portion of the root; others allow the process to heal thoroughly and drill a new socket for replantation. The success depending much on the operator and the constitution of the patient. Abscess of the teeth mentioned can be successfully treated without resorting to extraction. If the canals will not admit of general treatment, enlarge them, or drill through the alveola, and if necessary, remove a portion of the root.

How can you make a partial plate from which the patient can not bite off teeth? J. P. W.

We take for granted that the above is a rubber plate. If the trouble is from a long antagonizing bite, preventing the use of sufficient rubber backing, solder, to a plate tooth, a piece of gold plate of sufficient length to extend into the rubber, for the purpose of a secure anchorage. Drill and counter sink holes in that portion to be imbedded, and pack sufficient rubber over and under the support to give strength. If trouble is with teeth pulling from plate, connect pins with strip of platina soldered with pure gold. If the pins pull from teeth, use a strong tooth, and always grind in such a manner that the force of the bite comes invariably on the natural teeth.

A LOCAL ANESTHETIC THAT IS SAFE AND RELIABLE.—Much is said about local anesthetics. Patented nostrums and private formule are being hawked about the country, and sold from five to twenty-five dollars to dentists. Permit me to suggest a preparation that I think will come as near "filling the bill" as any they have tried, both as to cost, safety and effectiveness. It is a five per cent solution of carbolic acid in water. Four or five drops injected under the gum each side of the tooth to be extracted. In most cases, this is effective. Swelling and inflammation around the teeth causes its action to be the more noticeable and satisfactory. Its effect is almost instantaneous. As one has to use twenty drops of this solution to get one drop of carbolic acid, I need not caution intelligent dentists against constitutional symptoms arising from a too free use of this agent, as it will not be necessary to use enough to produce such results.

C. T. Meaker, Carbondale, Pa.

For Our Patients.

"Cap'n," said a tall, gaunt countryman to a New York dentist, "thar am the dingdist rack't kick'd up in one of my vittal apperatereses yeou ever heerd tell on, and I want yeou to take a peep at 'em and fire eout the kuss what's do'n up the biz'ness. But I say, Cap'n," he continued, as the dentist was preparing to examine his mouth, "I've got a little of the critter here," taking from his pocket a quart flask filled with whiskey, "to kind'r boost me up for the circus, and mebbe you'll take a smile with me." (This he added with a provoking wink in his left eye.)

"No, thank you," the dentist replied, good naturedly.

"Yeou see, Cap'n, out our way tusk-tinkers hurt oncomly when they git an all-fired grip on a feller's grinders, and a lettle stimerless, yeou know, helps one amazenly to stand the racket."

"What part of the country do you hail from?" asked the dentist.

"Jist outside on old Stuningt'n, in Connecticut, by gosh, and I ain't ashamed on it, nuther; but, atter all, Cap'n, it's the kusserdist teown to git ennythin' dun in the tusk fix'n line thar is in the United States of Ameereky."

"Why, Stonington is my native place," said the dentist.

"Yeou don't say so, Cap'n!" he exclaimed, while jumping out of the dental chair. "Neow gin me yeour paw, and we'll take a bumper on that," which he proceeded to do, and accomplished the job so well that nearly one-half the contents of the whiskey flask had been transferred to his stomach before he passed it to the dentist to "sample"—which he declined to do.

"Kin I ax, Cap'n, what yeour name moit be?" he inquired, after resuming his seat.

"O, yes," said the dentist, smilingly; "my name is ——"

"Yeou ain't old Gideon ——' son, be yeou?"

"He is my father," said the dentist, with a sickly pallor covering his face.

"Well, darn my pict'r, Cap'n, if that don't beat all Creashun and the Demokratick partee throw'd in ter boot. Why, I've seen Gideon—Gid we used to kall him—so pizen drunk that he couldn't tell his old brindle cow frum a biled onion hundreds of times. But I say, Cap'n, what on airth is become on Jake. He was the oldest kuss among the varmints, I reck'n. Why, I knowed Jake when he clerk'd on it fur 'Squire Sniggins, and got bounc'd fur kind'r

borrer'n things he furgot to take back. But, atter all, wust fellers as Jake is been hung many a time."

"Never mind Jake, or the old man, either; let us proceed to business," said the dentist, angrily.

"Flam bang the biz'ness, Cap'n—but say, old hoss, whatever went with Ike?"

"Don't know anything about him, nor do I wish to continue this conversation," shouted the disgusted dentist.

"Now, look o' here, Cap'n, I allers sed that when Ike run off with Sam Pipkin's colts he wuz pizen drunk, fur Ike, yeou know, didn't perzactly take to them ere kind of steel'ns."

"I tell you," shouted the now thoroughly enraged dentist, "I want you to get out of this office, or I'll put you out."

"I'll git eout if you want me to, Cap'n; but, atter all, I ain't got nuth'n agin enny of the varmints—but I'll git eout." Saying which he departed, leaving the dentist in a frame of mind not altogether angelic.

FIFTH FLOOR DENTISTRY.



"That tooth will come out this time!"

!!!!

"How do you dare to advertise 'Teeth extracted without pain?'" Said a patient.

"Why, I didn't hurt you while extracting that tooth. You were under the influence of gas."

"I know. It is your bill that pains me."

HOW MOTHERS MURDER THEIR BABES.—What would be the result if you should eat every hour? Yet some mothers cannot understand why their children are sick and cross "when they are fed frequently."

Book Review.

DENTAL SURGERY, by Henry Sewill.—This is an English work, republished by P. Blakiston, Son & Co., Philadelphia. Price not given. It is well illustrated, and complete in all its parts.

A good idea of its general scope and style may be had from the following extract from his description of

THE ORIGIN AND GROWTH OF THE TOOTH PULP.

He says:

By the ninth week of intra-uterine life the first appearance of the dentinal pulp may be detected. This pulp eventually becomes converted by calcification into the dentine or ivory forming the bulk of the tooth. Its elements first manifest themselves in the depths of the jaw independently of the enamel organ, but directly contiguous to its deeper surface. The pulp at first consists of a small papilla composed of nucleated cells, and penetrated by a vascular loop, and it is, in fact, at this stage merely a special division of the mucous tissue unusually rich in vessels and cells. Later on, when it has assumed more definite shape, nerve filaments can be traced into it. It grows until it impinges on the enamel organ, which becomes molded on it like a cap, while the papilla gradually assumes the form of the crown of the future tooth. Thus, for the incisors it becomes conical, and for the molars develops outgrowths corresponding to the cusps of these teeth.

By the beginning of the fourth month each rudimentary temporary tooth has become enveloped in a distinct closed sac composed of sub-epithelial connective tissue. This sac begins to appear as soon as the dentinal pulp is slightly advanced in development. An opaque fibrous outgrowth springs from each side of the base of the pulp, and grows towards the summit of the tooth, where it unites with that of the opposite side, and so forms the dental sac. By this time the connection between the enamel organ and the epithelial process from which it emanated has become severed, owing to absorption of the uniting neck or band of epithelium at the surface of the sac, and this absorption slowly progresses till the whole of the process disappears, leaving the sac completely isolated.

THE ORIGIN OF THE PERMANENT SET OF TEETH

is also well treated. He says:

The enamel organs of the ten teeth which replace the temporary set—namely, the incisors, cuspids and bicuspid—originate from a bud for each tooth, which is given off from the elongated

extremity of the epithelial lamina at its point of junction with the enamel organ of the temporary tooth.

The enamel organ of the first permanent molar is given off from the posterior extremity of the same epithelial band as gave origin to the temporary teeth. From the epithelial process of this enamel organ a bud springs for the second permanent molar in exactly the same manner as the permanent successors of the temporary set were evolved from the epithelial processes of that set. In a precisely similar fashion the enamel organ of the third molar, or wisdom tooth, arises from the epithelial process of the second molar.

These sixteen germs in each jaw constitute the first traces of the permanent teeth, and they each pass through the same phases of development as we have seen undergone by the germs of the temporary set, these phases being the appearance of the dentinal pulp, its junction with the enamel organ, and their enclosure in the sac. The only further difference to be noted between the development of the permanent and deciduous teeth is in the time which particular teeth take to pass through the successive stages of evolution. For example, the temporary teeth are usually all cut by the third year, while the first permanent molar, though its germ appears at the fifteenth week of fetal life, is not erupted till the sixth year. Similar remarks apply to the other permanent teeth; but it will suffice now to give the dates of the phases of their developments so far as above described. The enamel organs of the incisors, cuspids and bicuspid make their appearance about the sixteenth week of intra-uterine life; those of the first permanent molars about the fifteenth week; those of the second molars about the third month after birth; and those of the wisdom teeth can be demonstrated toward the third year. The dentinal pulps of the ten first-mentioned teeth appear at the twentieth week of fetal life; those of the first molars at the seventeenth week; those of the second molars about the first year after birth; and those of the wisdom teeth toward the end of the sixth year. The complete closure of the sacs of these teeth is accomplished in the order above mentioned at the 9th month, 20th week, 1st year and 6th year.

The enamel organ when first formed is composed entirely of epithelial cells—externally of the columnar, internally of the squamous variety. It retains its epithelial nature throughout the process of calcification. This process begins at the surface of the dentine, and progresses outward. Prior to deposition of earthy matter the columnar cells immediately in contact with the dentine increase greatly in length, and form six-sided prismatic bodies so arranged as to constitute a columnar epithelium, which, according to Waldeyer,

is the most beautiful and regular found in any part of the body. This layer is called the internal epithelium of the enamel organ. The external cells of the enamel organ (termed external epithelium) are shorter and more cubical in form. Numerous vascular papilla, arising from the contiguous tissue of the dental sac, penetrate to a slight depth the external epithelium, and serve doubtless to provide nutriment to the developing tissue. The cells forming the interior of the organ undergo transformation during the formation of the enamel. At first small and round, they soon become stellate in form, united with each other by their processes, and from the cells of this layer (called stratum intermedium), in contact and united with the internal epithelium, a continuous development of columnar enamel cells proceeds.

It has been just stated that the deposition of calcareous matter commences in the enamel organ at the surface of the dentine and proceeds outward. The completed tissue results from direct calcification of the internal epithelium. The calcification progresses from the periphery of each cell toward its centre, at the same time uniting the contiguous columns. Prior to the completion of the enamel the external epithelium and remaining portion of the stratum intermedium undergo atrophy. These cells ultimately disappear, or perhaps, as some observers state, they take part in forming Nasmyth's membrane (*cuticula dentis*), the skin of the teeth, the thin layer of tissue which envelops new-formed enamel.

Though the difference of opinion has no practical bearing on dental pathology or surgery, since all observers are agreed on the main point, namely, that enamel is developed through the medium of the cells of the enamel organ, it may be mentioned that some investigators believe that the calcareous matter is deposited by the cells, and that the cells do not themselves undergo calcification.

Let it be here noted as a point the importance of which, in discussing the nature of dental caries, will be apparent later, that study of the histogenesis of enamel shows that the tissue once formed is entirely cut off by the intervening mass of dentine from direct vascular connections, and that when fully calcified, the completed tissue being devoid of cellular or protoplasmic elements, cannot afterward be the seat of physiological processes or undergo any change due to influences arising from within.*

Calcification of the dentinal pulp begins before that of the enamel organ. The process by which the conversion is effected closely resembles the histological formation of bone. It commences

*We do see changes in the enamel of matured teeth. Where do these changes come from?—ED. ITEMS.

at the external surface and proceeds inward, the central portion with the vessels and nerves remaining to constitute the persistent dental pulp or "nerve" of the tooth. The dentinal pulp (as already mentioned) at first consists of a special division of the rudimentary mucous tissue, rich in vessels and cells. Its fibrous elements consist of a fine connective tissue, through which the cells are scattered. When the pulp has arrived at one stage of development the cells begin to be specially organized and arranged. By this time the pulp contains numerous nerve fibrils besides blood-vessels. The latter form a plexus close to the surface. The specialized cells are termed odontoblasts. They are developed from the cells lying at the periphery, where they become arranged in a layer so as to form a kind of columnar epithelium. This layer is termed the *membrana eboris*. The cells are finely granular, have no membrane, and contain a large rounded nucleus. They are each provided with numerous processes, which unite them with the contiguous odontoblasts, and with subjacent developing cells. The nuclei of the odontoblasts gradually disappear, and the cells become converted into a gelatinous material which undergoes direct calcification, and forms the whole of the hard constituents of the dentine. The changes take place from the periphery of each cell toward the centre. It is believed by most investigators that the central portion of each cell remains uncalcified, and forms the soft fibril which occupies the completed dentinal tube. The other views regarding the nature of the fibrils have been given in previous pages. The *membrana eboris* is constantly fed from the deeper layer of cells, which, united with the odontoblasts by means of their processes, form an uninterrupted series, and provide for the continuity of the dentinal tubes and fibrils. The layer of matrix immediately around the fibrils becomes converted into the dentinal sheaths—the lining walls of the tubes. It has not yet been ascertained whether the sheaths are calcified or not, since their structure cannot be examined except after maceration.

By the end of the seventeenth week of intra-uterine life a cap of dentine may be demonstrated on the pulps of all the temporary teeth. By the sixth month the first permanent molar has advanced to a similar stage of development. By the first month after birth the permanent incisors and cuspids are advanced to the same stage; and at the third year and twelfth year respectively, calcification has commenced in the second and third molars.

The entire crown of each tooth is represented in soft tissue before deposition of earthy salts commences, and as the tooth elongates by growth of the pulp from below successive portions undergo calcification to form the root.

The development of cement has not been made out beyond dispute. It probably takes place in a matrix formed by the investing fibrous coat of the dental sac. A special cement pulp has not been demonstrated in man. Cement* is, in fact, a thin layer of bone, and the process of its formation is in all probability similar to intra-membranous ossification of other bones.

Nasmyth's membrane, the skin of the teeth, is believed by some authorities to be formed from the residuum of the pulp of the enamel after the completion of that tissue. It is, however, much more probable, as stated on a previous page, that it is merely a thin layer of modified osseous tissue continuous with the cement, having a similar origin, and homologous with the coronal cement found on the teeth of some herbivorous animals.

The Proceedings of the National Association of Dental Faculties for 1890 are before us. This Association is doing a great good by raising the standard of graduation and unifying the studies. But it seems to us that if, instead of increasing the graduating course to three years, they had insisted on a better preparation for entering college, it would have been quite as well. And if they now insist on more practical work to enable the student to reduce to manipulating processes what he is taught in theories it would be a great improvement to the college course. Also, instead of so much formal lecturing, if there was much more conversation and demonstration, the memory would be better assisted, and knowledge would be more thoroughly digested into wisdom and skill.

In the last meeting of the Faculties much progress was made toward making the fees uniform in the twenty colleges represented. The following was finally passed :

RECOMMENDED, That for a full annual course of lectures the minimum sum of college fees be \$100; that diploma fees be omitted, and an examination fee of not less than \$25 be substituted therefor and made non-returnable; that a matriculation fee of \$5 be charged annually. Special-course fees to be \$10 for each branch taken and \$5 matriculation fee.

It was resolved that in the three years' course the studies shall be divided as follows :

First Year.—Anatomy, Physiology, Chemistry, Prosthetic, Technique and Practical Prosthetic Dentistry for the latter half of the term.

Second Year.—Anatomy, Physiology, Chemistry, and Pros-

*Is not this plain, English word *cement*, preferable to the pretentious Latin word *cementum*?—ED. ITEMS.

thetic Dentistry continued, General Pathology, Materia Medica, Therapeutics, Histology and Operative Dentistry.

Third Year.—Dental Pathology, Dental Materia Medica, and Therapeutics, Oral Surgery, Operative and Prosthetic Dentistry.

They also recommended that examination be made at the close of the first and second sessions in the studies pursued, and to students who have made the required attainment, a certificate stating their rights to advanced standing shall be issued.

Pending discussions of the report, Dr. Hunt offered the following substitute, which was adopted :

Resolved, That we recommend that students take two full courses in studies of a general character, such as Anatomy, Physiology, Chemistry, General Principles of Surgery, Materia Medica, and Therapeutics, and three courses in those of a special dental character.

A little ill feeling arose between the Faculties Association and the Association of National Dental Examiners, by an implied censure and threat of the latter, because some State Examining Boards had found applicants from colleges unable to pass State Board examinations.

The Faculties Association finally passed the following :

Resolved, That whereas the National Association of Dental Examiners have sent a communication to this organization, in relation to some of the graduates of colleges in this Association, and their examination by the State Boards, which reflects on the colleges named ; therefore

Resolved, That the Secretary of the National Association of Dental Faculties be instructed to ask them to withdraw the communication, and that in the future, that the standard of Dental education be maintained, and that harmony may exist between the two Associations, and also, as a matter of courtesy to the Faculties of the Colleges interested, that when a graduate of any college fails to pass the examination of any of the State Boards, the questions and answers of such examination be sent to the Dean of the College interested.

The Pacific Dental Journal is another new magazine launched on the sea of the dental profession. The Pacific Coast needs it, and will, no doubt, support it. It is a quarterly, of twenty-four pages, well filled, and with so much promise that the second number is to be enlarged. Dr. W. E. Burkhart, editor, Tacoma, Washington. Price, \$1.00.

The Iowa State Dental Society will hold its next annual meeting in Sioux City, Iowa, May 5th to the 8th, 1891. All are invited.

C. J. Peterson, President, Geo. W. Miller, Secretary.

Current Notes and Items.

Who is inventor of glass inlays?

Dr. Land's was patented December 20th, 1887. Demonstrated and samples shown by Dr. L. at the American Association meeting, August, 1886, at Niagara Falls.

WE are asked where pyoktanin can be procured. E. Merck, 71 Williams street, New York, manufactures it. I presume it is also to be had at other chemical houses.

Dr. W. N. Murphy's formula for impression material, from which a die may be cast direct: Plaster, 1 qt.; marble dust, 1 pt.; chalk, 1 pt. Mix and use as plaster.

It is said that vulcanized rubber dipped suddenly into boiling glycerine takes the character of unvulcanized rubber, sufficiently to allow broken joints to be united, and softened so that it is easily pressed into any new form.

Dentists object to be classed with common laborers in the census reports. But really, their labor is much like the Irishman's. They are never more at home than in digging; they are never happier than in old excavations, either cleaning them out or filling them up.

The Brooklyn Dental Depot of Atkinson & Hoard was robbed the other evening of 170 sets of English teeth and 800 sets of Wilmington teeth. The burglars entered through an adjoining vacant room, the key for which they obtained of a barber, under pretext of having hired it of the proprietor.

The Buffalo Dental Depot was recently burned. It was a serious loss, but the enterprising firm is fast getting on their feet again.

After the dental registration bill is engineered through the Legislature of Maine, the dentists will need to legislate against such persons as Mrs. Buzzell, of Brooks. This lady is 91, and only the other day her grandson extracted the first tooth she ever had pulled. But unfortunately he was not a dentist.

The Maryland Dental Association having refused to answer certain census questions on the ground that their calling was not to be considered a manufacturing industry, Superintendent Porter concludes that extracting information from unwilling persons is like "drawing teeth."

Clifford Mitchell has revised and improved his Dental Chemistry and Metallurgy. This book cannot be too highly commended. It is one of the Dental College series, and, while written especially for students attending college, is well adapted to the needs of the practitioner.

Rolls of bibulous paper are now made that are admirably adapted to keep a tooth dry, when the rubber-dam is inapplicable. Pressing it firmly around the tooth with a rubber-dam clamp improves its usefulness. These rolls are very handy, also, cut up into little wads for drying cavities.

The Dental Association, of Manitoba, at its recent meeting decided that henceforth they would not recognize American degrees. American dentists must have a two years and six months course of study in Canada before being permitted to practice. The idea is protection to the local practitioners.

A. W. Donaldson, of Fort Wayne, Ind., went to Ossian to do some dental work, and while there he complained of acute headache and late at night was found in convulsions. His death occurred the next morning. The deceased was a son of E. P. Donaldson, and one of the exemplary young men of Fort Wayne.

THE Philadelphia Dental College, during its last session, had 315 matriculates. Much the largest in the history of any dental college. Judging from the applications for the next term, that will also be quite full. It would have been in a sad predicament if it had not recently greatly enlarged its quarters. It has now fine facilities. Its graduating class was also very large—146.

American dentists are very popular in England. Their advertisements are always to be seen in the London *Times* and other English papers. It is also to be noticed that English dentists announce their readiness to "perform all operations with the latest American improvements." In Paris, likewise, American dentists are greatly favored with French patronage, and several have made fortunes by their skill.

Lord Houghton was one of the most agreeable of men, but he had one defect. He wore artificial teeth, and they were always falling about in a strange manner. The following story was told of him: He was in a railway carriage. A lady got in and sat down opposite him. In a second she jumped up. "Some one is biting me," she shrieked. And it turned out that Lord Houghton had put his teeth on the seat and that they closed on her when she sat down.

Walter M. Bartlett, D.D.S., in a very able article on the "Abuses of Crown and Bridge Work," says: "Another class of bridge work which should be done away with is what is called pin-bridges, where places are bridged over, getting the necessary support by drilling into sound teeth to insert the pins necessary to support the bridge." How this plan could have been conceived and adopted by any skilled, conscientious dentist passes our comprehension. It should be repudiated by the profession and forever shelved.

A dentist who lives up among the Oxford county hills saw two partridges in a farmer's wagon, so the story goes, and no one being in sight, slipped them under his coat and took them up to his office. A few days later he had a visit from the farmer, who took ether and had two teeth extracted and then walked away with the remark: "We will let this go toward those partridges." A few days later the operation and the remark were repeated; and this time the dentist observed: "It seems to me those partridges are coming a little high." "Oh," says the farmer, "I will get pay for those partridges in time."

"When I see," says a retired physician, "that more than 10,000 medical students have grown into full-fledged physicians in the United States during the last two years, I am inclined to rejoice at the fact that I am no longer practising. The extraordinary increase in the number of doctors, the evolution of the patent medicines from absurd quackery to scientific remedies and the growth of the prescribing habit among druggists make it hard work for the doctor to earn a living. Of course the specialist makes a big income, but there are many really clever physicians today who find it hard work to make both ends meet."

The Herbst method of Glass Inlays is as follows: The cavity is prepared in the usual manner without undercuts, and then lined with a piece of No. 60 gold foil, which was pressed into place with

hard wax; and the gold and wax removed and invested in plaster and pumice. The wax is then run off with boiling water, and the gold matrix is ready for the glass powder, to be had at the depots. The glass is now fused with a mouth blow-pipe, or from a Bunsen burner, or a gasoline blow-pipe. The glasses required may be obtained from beads of various colors finely powdered in a mortar, white, brown, yellow and blue. Mr. Bruce, recommends the use of one standard color, which can be modified by adding any of the four to match any shade. Probably Dr. Land, of Detroit, preceded Dr. Herbst in this work.

The Transactions of the Illinois State Society is received with thanks. What a grand display it would be if these Transactions could suitably reflect the influence, skill and prominence of dentistry in the great State of Illinois. But of course it can only record the doings of the State Society. In all the States the Society's Proceedings are meagre as a reflection of the status of dentists and dentistry in the whole State. This is because many of our best dentists do not attend their State Society. Perhaps it is impossible to have it otherwise, and it is to be regretted. But in spite of these difficulties in Illinois the Transactions of this State Society is a valuable contribution to dental literature, and we prize it as a means of enriching the pages of the *ITEMS*.

Liquid gutta-percha, according to the United States Pharmacopeia, is made thus: Gutta-percha in thin slices, 1 oz.; chloroform, 8 fl. oz.; carbonate of lead, in fine powder, 1 oz. Add the gutta-percha to 6 fl. oz. of the chloroform in a stoppered bottle, and shake them together frequently till the solution has been effected. Then add the carbonate of lead previously mixed with the remainder of the chloroform, and, having several times shaken the whole together, set the mixture aside and let it remain at rest till the insoluble matter has subsided. Lastly, decant the clear liquid, and keep it in a well-stoppered bottle. One part of this solution in 10 by weight of chloroform produces an excellent and convenient preparation for painting over cuts or wounds. It readily acts as a styptic and protective to the wound, and causes neither tension nor pain. If pure iodoform be added about 10 per cent it further enhances the value of the styptic, and can be used in veterinary surgery with marked success for applying to cuts and abrasions, as in arrests hemorrhage, forms a coating over the wound and promotes a healthy cicatrization.

Editorial.

IT MUST BE STEP BY STEP.

This is the Lord's order. All growths are gradual. Nearly all reforms, and other progress in society, come to maturity slowly. It is so in our own body and mind and character, and in all our important undertakings. It is step by step. If we despise the day of small things, we shall never see the day of great things; if we are not faithful in the details of to-day, we shall fail in the fullness of to-morrow; we must make our foundations sure and secure, deep and permanent, or our superstructure will fall. If we attempt to advance at a bound, we shall hurt ourselves; if we try to fly to the goal, we shall soon be in a sorry plight; we must be content with little advances, if they are only constant—the aggregate will be seen by and by.

When we first see and hear great men, they loom up before us so suddenly, they seem to have grown up in a day, or to have been thrust out by some sudden impulse, or at least to have been made remarkable from some fortuitous course, or special endowment of nature. No doubt nature does make giants, and golden opportunities give success. But the giant slumbers in most of us, and if we arouse him he will help us in some remarkable manner; golden opportunities come to all of us, and if we grasp them as they fly by, we shall be borne on their pinions to success. Yet the grasping of opportunities and the arousing of the giant are not enough; the first may give inspiration and the other strength, but there must be the development and intelligent application of opportunities, and the conversion of the giant's strength into wisdom and skill; these qualities and attainments come gradually, and come by stern plodding, thorough hard work and study. It is step by step. Every inch of advance must be in a path of our own making, and that through a dense, dark wilderness; and the obstructions are so great, we must literally hew our own course step by step.

Though success in anything important and lasting requires patience, courage, discipline, and continuity of purpose, yet life need not be gloomy and unenjoyable. If we are contented to plod on step by step, making each step a preparation for the next, our labor may be pleasure, our struggles fascinating, and our greatest perplexities ever ending in exhilarating surprises. There is something that even the business man may learn from the beatitudes of our Saviour. The poor "may be blest," because a realization of poverty may bring "Heaven;" "they that mourn" over their poverty may "be comforted" by the solutions of lessons that only this condition can give; "blest are the meek," for this is the fruit of the proper appreciation of our necessities, and the foundation of the true character, that by and by "shall inherit the earth." It is when we feel and mourn in meekness over our poverty that we "hunger and thirst" after that right being and right doing that gives wholeness of character and success in acting.

If we are contented thus to begin in the very valley of humiliation, and plod step by step, making each step a preparation for the next, our labor may be pleasure. Poverty has more luxuries than riches, mourning has more lessons than laughter, meekness prepares us for more prosperity than pride; the want of all things prepares us to enjoy the repleteness of plenty.

It is the rich-poor man that, instead of seeing Heaven, shall see disappointment; it is the giddy, conspicuous for thoughtlessness, and think "tears belong to women and children," who shall weep by and by; it is the proud, who, in their haughtiness and arrogance, are fools, and that think meekness effeminate, who make life a failure. These may hunger and thirst after something to satisfy their unnatural appetites, but they shall never be filled.

True success comes from the slow, measured steps of caution, thoughtfulness and skill, with sincerity of life and purpose that brings inspiration and wisdom.

The Indiana Dental College sends us one of the most beautiful Annual Commencement cards we have seen. It shows a list of ninety-six students.

HOW TO ENJOY WHAT IS OUR OWN.

The very process of accumulating may be enjoyable. There is a desire to possess property—even a passion to acquire it—that may be healthful, praiseworthy, and so invigorating to our whole being that we enjoy it hugely. Stagnation is misery, and brings death. Is it not singular that the process of throwing around what we have accumulated environments to protect it from loss is not so enjoyable? The latter supposes fear that often has torment, breeds selfishness that blinds us to life's greatest delights, and squeezes us into the grated prison in which we keep our treasure.

If we would enjoy what is our own, we must give it away. A queer prescription. But this brings that health of spirit, mind and body; that overflow of vigor, inspiration and heavenliness; that benevolence, sympathy and oneness with our fellows, which re-bounds with pleasure to which the selfish man is a stranger.

The miser says: "No, I will not give away my accumulations; or at least, no more than is absolutely necessary for my food and clothing." So he accumulates to hoard, and hoards to find the more he hoards the more emphatically he is miserable; for, in his efforts to accumulate and to keep, he dries up the sweet juices of his nature.

There are many selfish men who are not misers. They spend liberally, live in splendid mansions, and provide well for their household; yet they are not happy. Though they spend so freely that they consume a liberal income, and live so lavishly that they are surfeited with indulgences, yet they are not happy. They have no luxuries, because there is nothing rare they do not make common; and no indulgence they do not revel in. This man despises the miser who hoards, but he so selfishly wastes what he has on himself and those who are his, that he is disgusted and unhappy with his own prodigality.

It is the man who is satisfied with what he has that is happy; whose wants are only his needs, and whose surplus is cheerfully given to those from whom he can hope for nothing in return; whose busy brain and industrious skill keep the heart palpitating with the pleasures of earning with one hand and giving with the other;

whose passions are kept vigorous and healthy in being spent in sympathy, and constantly replenished by love's returns.

It is not, therefore, all of life to live. Unless we are continually giving that life to others, we can know but little of the pleasures of living.

When we look back on our path and see the wrecks of our desires, purposes, plans, and labors, we are sometimes discouraged for the future. Our successes have been hardly one to a hundred of our failures. We see a similar disparity of successes in others in all departments of study, trades, and professions. Yes! and in social life and in morals. How can we expect to do better than the multitude who have struggled in vain? Or in our own past? Truly, is not life a failure?

And yet, in some things we have succeeded. Are there not some bright spots in our memory? And some we have met along the road have not been failures. The world is advancing, and some one is advancing it. Are we not doing some little, with others, to improve it? It is not all dark; and if we have succeeded in a few things may we not in others? So let courage take hope, and hope buoy us up to new endeavors. It is only the courageous—the audacious, we might almost say—who succeed. There are none that do not make more failures than successes, but some make failures stepping-stones to success.

Generally we can judge a dentist by his surroundings. He makes an impress of himself—his morals, his learning, his skill and his social status on his office, and his very personal appearance. This is the way strangers entering our office, or even seeing us on the streets, in the most casual manner, judge us.

Sometimes it is false judgment; we may be better or worse than we appear, and better or worse than the appearance of our office. But these exceptions are so rare that they are hardly to be considered.

Reader, just look about your office and see yourself as others see you. Does it satisfy you? Look in the mirror and see if you might not improve your own appearance; and then watch your

work, and see if all together might not take on a new dress, greater carefulness, and show more of the true workman in cleanliness, precision, neatness, solidity and worth.

GUTTA-PERCHA, AND HOW TO USE IT.

Much of the gutta-percha used in filling teeth is injured by age or impurities, or is not from the right source for our use; some that might be good is improperly prepared; and we spoil some by not knowing how to use it, especially by excessive heating. It is not always the hardest that is the best, for its hardness is produced by a large proportion of zinc, clay, or other foreign substances, and often by working these in under a high degree of heat. Then there is much difference in the dexterity and thoroughness of its manufacture. We should use great patience, and, if necessary, spend money, in finding the best make in the market, and then stick to it.

The only safe way to use gutta-percha is to heat it over water. Before placing it in the tooth cavity, it is well to smear the walls with a little chloro-percha—that is, gutta-percha dissolved in chloroform. Then the stopping will adhere to the walls, and make a more perfect and water-tight filling. See that it is really soft before carrying it to the tooth; then, with a warm instrument, press it thoroughly to place, and polish quickly. Heating the tooth by a hot blast drawn into your bulb-blower from your lamp helps to manipulate it, and to make the filling stick to the walls of the cavity. If it is a soft variety, it is sometimes well to rub a very little oil or glycerine on your instrument. The red gutta-percha, used sometimes for trial plates, is good for temporary fillings, but the harder varieties, if good and properly used, will last a long time.

Peroxide of Hydrogen must be kept in a cool place. Do not expect favorable results from its use when it has become deteriorated by age or exposure to air or continual warmth. It is an unstable article; and, therefore, if from any cause it is not active in its properties it should be thrown away and new procured, as direct as possible from a reliable dealer. In the hands of the intelligent dentist it is destined to play an important part.

Miscellaneous.

CEMENTS OF RUBBER AND GUTTA-PERCHA.

For damp surfaces where there is a constant presence of moisture, there is nothing equal to Jeffry's marine glue, the formula for which has been published and republished all over the world. It consists of: 1 part India-rubber, 12 parts coal tar, 2 parts asphaltum.

The rubber is dissolved in the undistilled coal tar, and the asphaltum is then added. This glue is excellent for mending articles at sea, or patches that are to be laid on surfaces that are to be under water. For cementing glass, rubber is dissolved in benzine and some hard drying gum is added.

A gutta-percha cement for leather is obtained by mixing the following. It is used hot. Gutta-percha, 100 parts; black pitch or asphaltum, 100 parts; oil of turpentine, 15 parts. An elastic gutta-percha cement especially useful for attaching the soles of boots and shoes by dissolving 10 parts of gutta-percha in 100 parts of benzine. Roughen the leather before using. The clear solution from this is then poured into another bottle containing 100 parts of linseed oil varnish, and well shaken together.

Good rubber cement for sheet rubber, or for attaching rubber material of any description or shape to metal, may be made by softening and dissolving shellac in ten times its weight of liquid ammonia. A transparent mass is thus obtained, which, after keeping three or four weeks, becomes liquid, and may be used without requiring heat. When applied it will be found to soften the rubber, but when the ammonia is evaporated it forms a kind of hard coat, and causes it to become both impervious to gases as well as liquids.

Davy's universal cement is made by melting 4 parts of common pitch with 4 parts of gutta-percha in an iron vessel, and mixing well. It must be kept solid, under water, or in a dry hard state.

A very adhesive cement, especially adapted for leather driving belts, is made by taking bisulphide of carbon, 10 parts, oil of turpentine, 1 part, and dissolving in this sufficient gutta-percha to form a paste. The manner of using this cement is to remove any grease that may be present in the leather by placing on the leather a piece of rag and then rubbing it over with a hot iron. The rag thus absorbs the grease. If the surface is then well rubbed with ammonia it is still better. The two pieces are then roughened and the cement lightly spread on. The two pieces thus joined are subjected till dry to a slight pressure.

A solution of gutta-percha for shoemakers is made by taking pieces of waste gutta-percha, first prepared by soaking in boiling water till soft; it is then cut into small pieces and placed in a vessel and covered with coal tar oil. It is then tightly corked to prevent evaporation, and allowed to stand for twenty-four hours. It is then melted by standing in hot water till perfectly fluid, and well stirred. Before using it must be warmed by standing in hot water.

A cement for uniting India-rubber is composed as follows: 100 parts of finely chopped rubber, 15 parts of resin, 10 parts of shellac; these are dissolved in bisulphate of carbon. Broken rubber shoes can thus be mended nicely.

Another India-rubber cement is made of: 15 grains of India-rubber, 2 ounces of chloroform, 4 drams of mastic; first mix the India-rubber and chloroform, and when dissolved the mastic is added in powder. It is then allowed to stand by for a week or two before using.

Cement for sticking on leather patches and for attaching rubber soles to boots and shoes is prepared from virgin or native India-rubber, by cutting it into small piece or shredding; a bottle is filled with this to about one-tenth of its capacity, benzine is then poured on till about three parts full, but be certain that the benzine is free from oil. It is then kept till thoroughly dissolved and of a thick consistency. If it turns out too thick or thin, suitable quantities must be added of either material to make as required.

A good elastic cement is made by mixing together and allowing to dissolve: 4 ounces of bisulphide of carbon, 1 ounce of fine India-rubber, 2 drams of isinglass, $\frac{1}{2}$ ounce of gutta-percha. This cement is used for cementing leather and rubber, and when to be used the leather is roughened and a thin coat of cement is applied. It is allowed to completely dry, then the two surfaces to be joined are warmed, placed together and allowed to dry.

Cement used for repairing holes in rubber boots and shoes is made of the following solution: 1. Rubber 10 parts, chloroform 280 parts. This is simply prepared by allowing the rubber to dissolve in the chloroform. 2. Rubber 10 parts, resin 4 parts, gum turpentine 40 parts. For this solution the rubber is shaved into small pieces and melted up with the resin, the turpentine is then added, and all is then dissolved in the oil of turpentine. The two solutions are then mixed together. To repair the shoe with this cement, first wash the hole over with it, then a piece of linen dipped in it is placed over it; as soon as the linen adheres to the sole, the cement is applied as thickly as required.

—*Rubber World.*

NEGATIVE ADVICE BY A PHYSICIAN.

"It is not so much what to do as what not to do," is the maxim in the title page of "A Doctor's Don'ts," published by G. W. Dillingham, New York. Below are a few "don'ts" culled from the volume:

Don't ask a druggist to prescribe for you.

Don't torture the body with heavy clothing in summer.

Don't forget that moral defects are as often the cause as they are the effects of physical faults.

Don't direct special mental or physical energies to more than eight hours' work each day.

Don't endeavor to rest the mind by absolute inactivity; let it seek its rest in work in other channels and thus rest the tired part of the brain.

Don't neglect to constitute yourself a public protector by thrusting into the gutter every banana or orange peel you may encounter on the sidewalk.

Don't neglect any opportunity to insure a variety of food.

Don't pamper the appetite with such variety of food that may lead to excess.

Don't neglect to have your dentist examine your teeth at least once every six months.

Don't wear pointed shoes. They have a tendency to dislocate the second toe upward and to produce corns, and sometimes ulcerations.

Don't wear a shoe the sole of which is not broader than the outline of your sole when pressed by your full weight on a piece of paper and marked with a pencil.

Don't keep the parlor dark, unless you value your carpet more than your own and your children's health.

Don't hesitate to avail yourself of every opportunity to rest at midday during hot weather. Follow the examples of the denizens of hot regions, who quite rationally indulge in the needed "siesta."

Don't delude yourself into the belief that you are an exception as far as sleep is concerned; the normal average of sleep is eight hours.

Don't miss an opportunity to sleep from 10 at night to 6 in the morning.

Don't continue to strive to earn money when you are advanced in years; devote the remainder of your life to entertaining occupations, preferably for the benefit of humanity at large, and thus avoid premature death, or perhaps paralysis, which may leave you a helpless imbecile and a burden to others.

Don't believe the printed statements of "wonderful cures" made by advertising quacks.

ALUMINUM—A LITTLE EXPERIENCE.—"This bit of aluminum," said Colonel L. C. Weir, of Cincinnati, the other day, pointing to a small bit of the metal on his desk, "cost me just \$10,000. Yes, that's rather dear for aluminum, I admit, but still," with a smile, "we must have it, you know. I became interested in a man who had a 'perfect process' for making aluminum. A company was organized and the stock subscribed. The process looked very well on paper, but this is all I have to show what became of \$10,000, the amount of my stock. I'm rather curious to see how successful these newer processes of making aluminum will be."

THE DEPOSITION OF ALUMINUM.—Aluminum is one of the most difficult and uncertain of metals to deposit electrolytically. The following recipe is given by M. Herman Reinbold, who states that it furnishes excellent results: Fifty parts by weight of alum are dissolved in 300 of water, and to this is added 10 parts of aluminum chloride. The solution is heated by 200 degrees Fahrenheit, and when cold, 39 parts of cyanide of potassium are added. A feeble current should be used.